

# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2296.—VOL. XLIX.

LONDON, SATURDAY, AUGUST 23, 1879.

WITH  
SUPPLEMENT.] [PRICE  
SIXPENCE  
PER ANNUM, BY POST, 21 4s

**M** R. JAMES H. CROFTS, STOCK AND SHARE BROKER  
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No. 1, FINCH LANE, CORNHILL, LONDON, E.C.  
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25 East Van, £1 5s. 30 Morfa Du, 16s. Amalgamated, 4s.  
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25 Frontino, £2 1/2. 25 Parys Corporation, 10 Wye Valley, 12s. 6d.  
25 Herodfoot, £2 1/2. 10s. 20 West Chiverton, all calls paid, 25s.  
100 Javall, 6s. 9d. 150 Penruthal, 1s. 3d. 150 Richmond, 27 1/2.

\* \* \* SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS  
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FOREIGN BONDS—SPECIAL BUSINESS.

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ESTABLISHED 1842.

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100 DON Pedro, 10s. 50 Marke Valley, 12s. 20 Wh. Pever, £10 1/2.  
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5 East Pool, £12 1/2. 150 Nouveau Monde. 25 West Pever, 2s.  
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20 East Van, 17s. 6d. 50 Herodfoot, £2 2s. 6d.  
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25 Hultafall, £1 5s. 50 West Pever, £9 10  
25 Leadhills, £1 15s. 6d.  
5 Minera, £29 1/2, cum div  
50 Parys Corporation, 10s.  
25 Tankeville, 1s.  
5 Van, £15 1/2.  
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50 Flinstaff, 5s. 200 Pentrese, 4s. 9d. 5 West Chiverton, 22s. 6  
25 Leadhills, £1 17s. 6d. 25 Morfa Du, 16s. 50 Yorke Peninsula pref,  
25 Herodfoot, £2 5s. 6d. 15 Richmond, £7 1/2.  
40 Nouveau Monde, 16s. 25 Swansea Tram., £7.  
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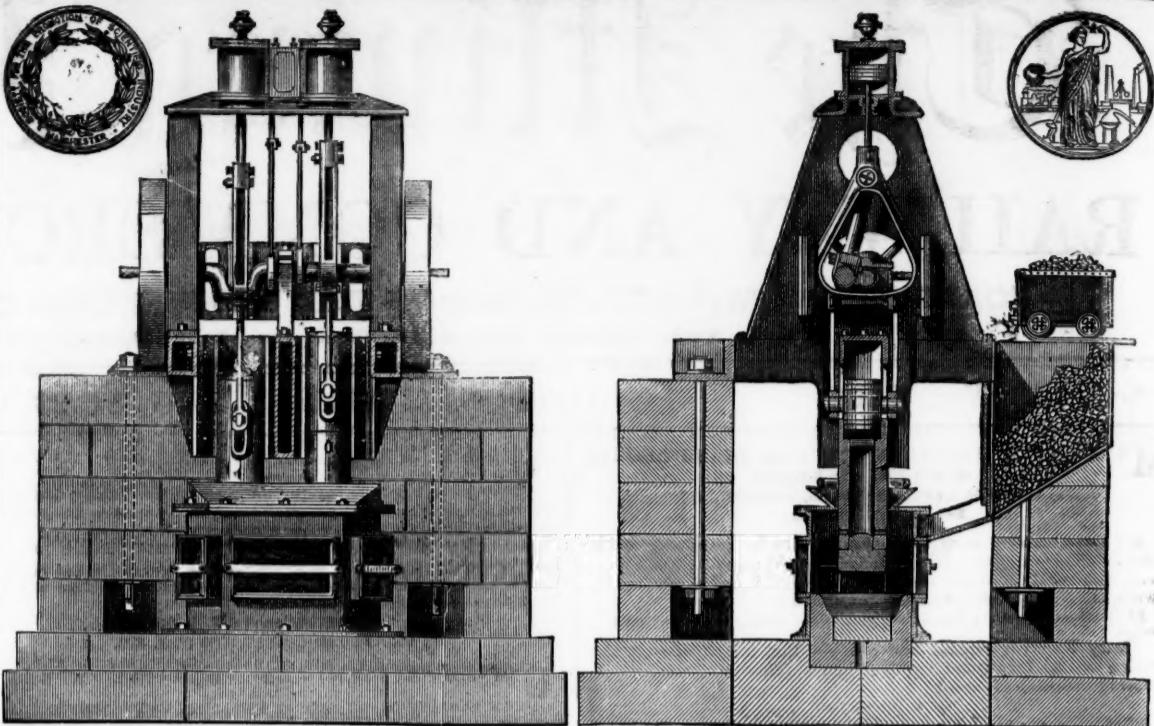
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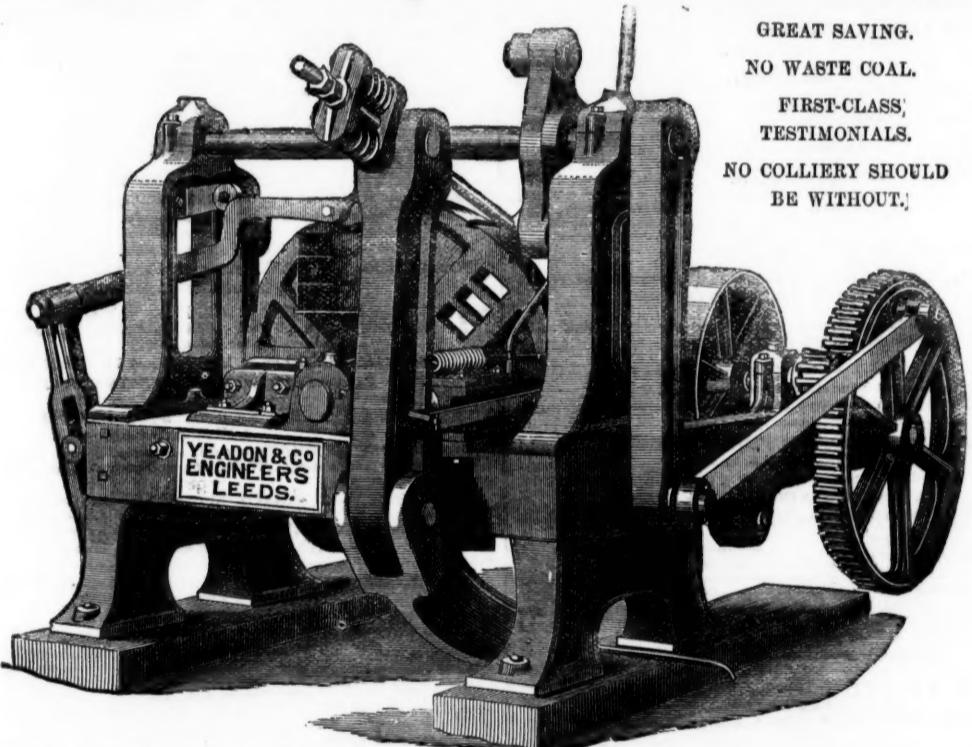
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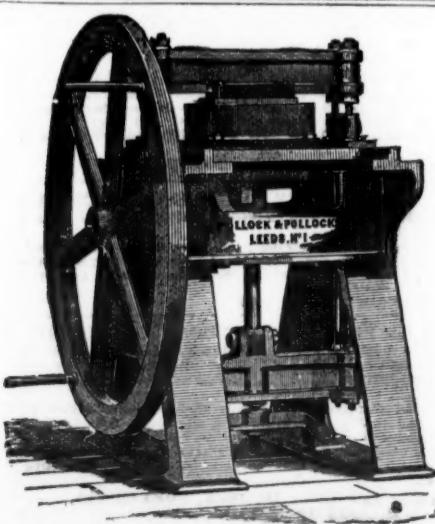
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## Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES.\*—No. CXXVII  
BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,  
Mining Engineer, Wakefield.  
(Formerly Student at the Royal Bergakademie, Clausthal.)  
[The Author reserves the right of reproduction.]

## SECTION IV.

## SIDE OVERSTOPING.

When the width of a lode exceeds 15 ft., especially in the case of understoping, the workings become dangerous, owing to the liability of portions of the ground or attle packing crushing in. In the case of wide lodes this difficulty is got over by the methods we have called side overstoping, side understoping, and cross stoping. Side overstoping consists in working away at first only one half, or one third, or one fourth of the width of the lode, according to the greater or less thickness.

In Mr. Beckwith's mine, Isle of Man, where the lode is from 30 to 40 ft. in width, the mineral is obtained by working half the lode at a time. The level is driven in the lode close to the lying wall, and a cross-cut is driven every 8 to 12 fathoms to the opposite wall of the lode, where a level is started in opposite directions of half the width of the lode. When the levels have been carried through from one cross-cut to the other they are strongly timbered, and then packed with attle. A second stage is then worked out above, and packed with attle, and then a third, and so on up to the level above. When the half of the lode on the hanging side has thus been worked out the remaining half, on the lying side, is worked out in the same manner. In this mine the bunches and strings of ore lie chiefly on one side of the lode. At the Foxdale mines, in the Isle of Man, the lodes are 30 to 40 ft. wide, and contain diffused galena in soft clay-slate. The workings are similar to those in Mr. Beckwith's mine, except that it is opened out by levels on both sides of the lode, the two halves of the lode being got separately.

The wide lodes in the Harz district, especially in the neighbourhood of Lauthenthal, are worked out in three or four separate divisions of from 8 ft. to 10 ft. in width. The lodes are opened out generally by means of levels on the lying side, and the first 8 ft. to 10 ft. of the lode next the lying wall is worked away by means of overstoping. When the working of this strip is so far advanced that three (or more) stopes have been opened out, the second, 8 ft. to 10 ft. next the lying wall, are then attacked, and opened out with stopes in the same manner. If the lode is from 25 to 30 ft. wide this will form the middle strip of the lode. When this strip has been so far advanced that three (or more) stopes have been opened out, and the first strip so far advanced that six (or more) stopes have been opened in it, the working away of the third, or last strip, according to the width of the lode, is commenced. In this manner the whole width of the lode is excavated. A cross section of the lode will then show, as it were, a side or cross stoping arrangement, with three or more stopes, according to the width of the lode, the roof of these stopes being from 8 to 10 ft. long, and the face three times the depth of one of the longitudinal stopes (the working stopes). The lower two-thirds of the face of these stopes are covered by attle packing, so that no access can be obtained from one series of stopes (one division of the lode) to another, except at the shaft or cross-cut. When passes are used to pass the ore from the stopes down into the level below it will be evident that when they are carried vertically upwards they will pass first through and serve the first division or set of stopes, and as they are carried higher through the middle portion of the lode will serve for the second set of stopes; and, lastly, when it reaches the opposite side of the lode it will serve for the last set of stopes. The lowest or first stope of the series next the hanging wall will communicate with the level by a number of cross-cuts left timbered through the attle. The level being driven in the lying side of the lode, the attle rests directly upon the solid portion of the lode below, so that when the next lower portion of the lode is being worked up to the attle packing above the last portion will require to be got with spilling timber, to prevent the attle crushing in on the men below. The roof and hanging side of each stope will consist of the solid unworked portion of the lode, whilst the floor and lying side will be formed of attle packing, hence it will generally be necessary to timber the lying side, and it is on this account that the stoping is commenced on the lying side of the lode, since otherwise the attle packing would form the hanging side of the stopes, and require more timber. When the lode is but slightly inclined, and the attle carefully packed with the larger pieces on the hanging side, so as to form the lying side of the stopes of the next following set, the use of timber may be avoided altogether. The same object is sometimes attained by working the lode away, not on the full dip of the lode, but with a slight inclination, so that there is less tendency on the part of the attle packing to slip into the open space of the stope.

SIDE UNDERSTOPING.—Exactly corresponding to the above modification of overstoping, wide lodes can be worked by a similar modification of understoping, which we have called side understoping. As will be at once evident, by this arrangement the roof and hanging side of the stopes will be formed of attle packing, and both will require well timbering. This objection is so fatal that side understoping may be practically said to exist only in name, and it is difficult to imagine any conditions under which its use is likely to be more advantageous than the modes of side overstoping or cross stoping.

FACE STOPING.—This may be considered as a modification of overstoping, in which each stope is carried forward to the limit of the division opened out (to the next shaft) before the second stope is commenced, and likewise this second stope completed before the third is commenced, and so on until the whole of the deposit is worked out to the next level above. As will be at once evident, the number of working places is vastly reduced for a given area opened out, and hence the production is limited. It is only of local importance, being the method used for working some of the highly inclined (not under 40°) coal seams of Westphalia, which are of considerable thickness, or where the roof breaks down pretty readily on the excavation of the coal.

The division is opened out by means of a level driven to or past the limit of the division. A parallel, or covering off, level is driven at the same time on the rise side, so as to keep a safety pillar for the road. The covering off level is driven from a stope jig brow, which forms the limit (nearest to the shaft) of the division. At a distance of 9 to 10 yards from the jig brow an inclined road is driven to the rise, to connect the main and covering off levels. This inclined or diagonal road is continued forward, past its junction with the covering off level, till a face, or stope, 9 to 10 ft. in width is obtained, and the coal is then stope or worked out to the end of the covering off level, which terminates in a second jig brow. Another face or stope, 9 to 10 ft. in height, is then covered off, and brought back to the near end, where it is terminated by the continuation of the diagonal road. A third face, or stope, of 9 to 10 ft., is then opened out by continuing the diagonal road, and this stope is carried forward to the end of the division opened out, the fourth face, or stope, being brought back from the second jig brow. When owing to the diagonal direction of the diagonal road the pillar left between it and the jig brow becomes too great, a second covering off level is driven through the solid pillar from the jig brow, and when this has advanced a sufficient distance (8 to 10 yards) a diagonal road is started from this level. When owing to the divergence of the diagonal road and the covering off levels (which are at the point where they join each other, driven as a single road, with a gradually enlarging width of working face), the width of the working face becomes 9 to 10 ft., this width is stope out to the end of the division, parallel to the main level, or the covering off levels. The second covering off level set off at a

proper distance up the jig brow, the last portion stope out from the first covering off level will be close to the first portion stope out from the second covering off level. The coal between the second and third covering off levels is stope out in exactly the same way as that between the first and second covering off levels. The dirt and stone which fall in from the roof of the goaf (the hanging wall of the seam) are levelled to form a roadway; the inclined road, having solid coal on the one side, is kept open on the other by packing the stones more carefully to form a wall. When the working away of the coal has advanced so far that there is insufficient material to pack the excavated space fully enough to keep the road (formed by levelling the fallen stones) sufficiently near to the working places to serve as a conveyance road; and when also the surface of open unpacked ground becomes so great as to render it dangerous to the colliers working at the coal stope, it becomes necessary to have a pillar of coal of sufficient thickness, and to commence entirely anew from a level on the rise side of the pillar.

CROSS STOPING.—According to Lottner this mode of working was introduced as early as the year 1749 by the mine manager, Herr Zisper, at and for the purpose of working the well known Spitaler Lode, in Hungary; and although it has now been almost discontinued for working the Spitaler Lode, it is still a favourite method for working out highly inclined and wide lodes, and massive deposits, such as we have included under the term Stockwerke. Cross stoping, or, as it is sometimes called in this country, the sectional method, may be described as that mode of stoping in which the stopes are carried forwards across the lode, and so that the stopes, which are arranged in the usual step-wise fashion, are all in the same horizontal plane.

The mode used in working the Spitaler lode may be described as follows:—The lode is reached by means of cross-cuts every 20 fms. in depth, driven from the shaft, to intersect the lode. If the shaft has not been sunk at once on the lying side of the lode—so that between the surface and the point where the shaft intersects the lode all the cross-cuts reach the lode first on the hanging side—the cross-cuts are then continued forward through the lode to the lying side, when the lode is opened out by levels driven right and left close to the lying side. The cross-cuts from the lower portion of the shaft will reach the lode first on the lying side; at the end of the cross-cuts levels will be at once driven right and left in the lying side. In this manner lodes will be opened out by levels 20 fms. apart, driven in the lying side, or partly in the lode and partly in the country rock forming the lying side, so that the water can be carried off without being liable to sink through the lode to a lower level. If it is desired to leave that portion of the lode in the same vertical plane as the shaft and the cross-cuts intact the working away of the lode is commenced somewhat to the right and left of the place where the cross-cuts meet the lode. According to the character of the lode will depend whether the stopes are driven with a step-wise arrangement, or, as in last-described method, face stoping, the stopes are driven separately to the opposite side of the lode. When the lode is sufficiently compact the first method is adopted. The commencement is made by driving a stope, from 8 ft. to 10 ft. wide, and from 6 ft. to 8 ft. in height, from the level towards the hanging-wall. When this first stope has advanced sufficiently, 4 yards or more, a second stope of the same dimensions is commenced, and when this second stope has advanced the same amount a third stope is commenced. In this manner the workings when looked at in plan assume the step-like arrangement characteristic of stoping. The attle is packed behind as the stopes advance towards the hanging-wall. The level on the lying side of the lode is well timbered, and lagged on the roof and hanging side, to prevent it being crushed in and filled up by the attle packing.

## THE Isthmus of PANAMA.

Whatever difference of opinion may exist as to the desirability of the precise route chosen by Mr. Ferdinand de Lesseps and his engineers, there can be no question that a ship canal across the isthmus of Panama is perfectly practicable, and has every prospect of being sufficiently remunerative to those who undertake its construction to ensure the cordial support of capitalists, and it must be particularly gratifying to find that the proposed route from Navy Bay to the estuary of the Rio Grande has been recommended for nearly half a century as the most desirable and practicable route across the isthmus. In connection with the subject, Capt. George Peacock has just issued a very interesting series of notes,\* and the information afforded cannot fail to prove of considerable value to those intending to invest in the enterprise. Between 1831 and 1842 Capt. Peacock crossed the isthmus five times. Capt. Peacock at the first blush of his explorations had an idea that the river Chagres itself might be made available for a canal by sheet piling and embanking the river in its centre excavating, dredging one of the halves of the piled embankment to the natural bank of the river, but on exploring beyond Gatun and finding the Chagres so tortuous, he considered this plan impracticable, and thought that a canal from Port Limon as straight as it could be made to the estuary of the Rio Grande on the usual method of cutting would be preferable, and that its length, including meandering to avoid rocky ground, &c., would be about 32 to 35 miles, perhaps less, and that the deepest cutting required might not exceed 150 to 200 feet at the highest points of the water sheds. The precise figures can of course only be ascertained by levelling, &c., but Capt. Peacock is quite satisfied from his personal explorations that no tunnelling would be necessary, and that the deep cuttings would neither be extensive nor numerous.

Somewhat similar views were expressed by Dr. Cullen, another old correspondent of the *Mining Journal*, about 25 years ago, that a ship canal was perfectly practicable across the isthmus, and that the best route was from Caledonia Bay to Fuerte del Principe. The project was fully noticed in the *Mining Journal* of Jan. 22, 1853, and it was mentioned that Dr. Cullen proposed the line from Port Escoces at the head of the Gulf of Darien, on the Atlantic side of the isthmus to the Gulf of St. Miguel, by the River Savana, on the Pacific. The entire length of the canal would be 39 miles, of which the portion to be cut would be from 22 to 25 miles, and of this latter, again, only 3 or 4 miles would be deep cutting. It was pointed out that it should be completed on a style of grandeur commensurate with its important uses—cut sufficiently deep to allow the tide of the Pacific to flow right through it to the Atlantic, so that ships bound from the former to the latter would pass with the flood, and those from the Atlantic to the Pacific with the ebb tide of the latter. The advantages claimed for the route were—its shortness, the excellence of its harbours, the low elevation of the land, the absence of bars at the Savana and Tuya mouths, the depth of water and great rise of tide at the former, its directness of course and freedom from obstruction, the healthiness of the adjacent country, the exemption of the coasts from north winds and hurricanes, the capability of cutting a canal without locks, and the absence of every engineering difficulty.

Although the general direction of the canal has been decided upon it must be assumed that no active operations would be commenced until abundant preliminary surveys have been made, for Mr. F. de Lesseps is far too experienced an engineer to finally determine the exact route upon any such flying surveys as have yet been made. It is sufficient to know that the project is worthy of attention, that it has been conclusively proved that a ship canal across the isthmus is practicable, and that the assistance of a man of the energy and experience of Mr. F. de Lesseps has been secured for carrying it out, and this being known capitalists will have a far better prospect of success by refraining from demanding a defined scheme of details—for the expenditure of a few thousands in money and a few years in time for a series of surveys might make the difference between failure and a complete success. That Mr. Peacock was one of the earliest projectors of a ship canal across the Central American isthmus none would be more willing than Mr. F. de Lesseps to

admit, and Capt. Peacock would certainly be entitled to more than mere credit if his suggestions of 1831 prove worthy of adoption. His volume contains details which would be of much value to all engaged in elucidating the subject, and might lead to the selection of a route which would not only have the advantage of an absence of locks, but also be free from the ship-tunnel, which many of the most competent engineers consider unnecessary, if not entirely impracticable.

## ANNUAL RECORD OF SCIENCE AND INDUSTRY.

It has now become so customary for scientific questions to be raised in ordinary conversation amongst the educated classes that it is absolutely necessary to keep oneself posted as to what is going on not only in one's own country and in the particular science in which one takes an interest, but in all parts of the civilised world and in all sciences which are either directly or indirectly connected with the science studied. To attempt to acquire this knowledge by reading the innumerable scientific memoirs communicated to the various scientific societies in various languages, and published in all kinds of forms and places, is practically impossible; and such works as the *Annual Record of Science and Industry*,\* which has for some time past been prepared by Mr. Spencer F. Baird of the Smithsonian Institution, afford the only substitute for the extensive course of reading indicated. From the character of the Institution with which Mr. Baird is connected he has probably greater facilities for collecting material for his volume than could be claimed elsewhere, whilst his own experience and the assistance he has obtained from men of high repute in the several sciences dealt with afford a guarantee that all important facts will have been recorded.

The section of astronomy has been entrusted to Mr. E. S. Holden, of the U.S. Naval Observatory at Washington, who has evidently spared no trouble to make the record complete though concise. An important feature of the astronomical summary in the present volume is the reports from American observatories furnished by the directors themselves in answer to a circular letter. It is hoped that by means of these replies accurate knowledge of the activity of the American observatories may be had, and it is intended to continue these in future. A similar series of reports for European observatories is yearly made to the German Astronomical Society. Condensed translations of these are given in Mr. Baird's volume. The physics of the earth section has been undertaken by Mr. Cleveland Abbe of the Army Signal Office. As to internal temperature he says that the temperatures in the St. Gotthard Tunnel have been accurately observed by the engineers, and their observations discussed by Staff and Hann. They, however, can give little or no reliable information as to the temperature of the earth in its interior, and the whole of our present knowledge on this subject is thoroughly unsatisfactory. Mr. William Morris, of Earl's Hill Colliery, published an earnest remonstrance against accepting temperatures of the ground as observed in coal mines as having anything to do with the temperature of the earth at that depth; such figures according to him are wholly dependent on the ventilation of the mine—the portion of this section relating to the ocean has been prepared with the assistance of Commander E. P. Lull of the U.S. Navy. The section of Physics is written by Prof. G. F. Barker of the University of Pennsylvania. It is herein stated that electric lights have become quite numerous in Paris, but it might have been added considering the date of the publication of the book that a careful trial proved them to be a failure. Those originally interested in the patents may congratulate themselves that before the collapse at Paris the Russian, English, and other patents were sold, and the credulous purchasers with them. It is probable that Aug. 14 will be the last day upon which at least any yet discovered electric light will be seen in public use. The light is non-diffusive and very unreliable, and this statement refers equally to all which have yet been seen either in Europe or America.

The section of chemistry is also undertaken by Prof. G. F. Barker; mineralogy, by Dr. E. S. Dana of Yale College; geology, by Dr. T. Sterry Hunt, F.R.S.; hydrography, by Lieut.-Com. Francis M. Green, U.S.N.; geography, by the same; microscopy, by Prof. Hamilton L. Smith of Hobart College, Geneva, N.Y.; anthropology, by Prof. Otis T. Mason of Columbian University, Washington; zoology, by Dr. A. S. Packard, jun., of Brown University, Providence, R.I., so far as regards the general science and invertebrates; vertebrate zoology, by Prof. Theodore Gill of Washington; botany, by Prof. W. G. Farlow of Boylston Hall, Harvard College; agriculture and rural economy, by Prof. W. O. Atwater of the Wesleyan University, Middletown, Conn.; and engineering, technology, and industrial statistics, by Prof. W. H. Wahl of Philadelphia. Sections are also devoted to necrology and bibliography, and there is an excellent alphabetical index.

Although the contributors are so numerous, and they are so widely separated from each other, they have worked most harmoniously, so that one style has been followed throughout; and as the system adopted by each writer has been to weave the almost innumerable statements of facts into a continuous narrative, so that the entire 700 pages can be read through without becoming tedious, whilst the amount of information that can be obtained is almost inestimable. The volume is in every respect equal to any of its predecessors, and is well deserving of an extensive circulation.

## THE MODEL LOCOMOTIVE ENGINEER.

The details of a dry subject can often be imparted by means of a popular narrative to those who would not think of troubling themselves with a mere systematic record, and a well written record is sometimes interesting and readable, although very few new facts are given. In the volume now under consideration Mr. Reynolds devotes a large proportion to the history of the pioneer engineers and to the early history of the locomotive, yet there is sufficient newness in the style to ensure its being read with pleasure by those for whom it is intended—those practically engaged in connection with railways and locomotives, and it forms a satisfactory introduction to the chapters which form the main object of the book—that of teaching engine boys, firemen, and engineers to pay the utmost attention to their work, and advocating the grant to them of certificates of competency. He states that as now constituted the service is unpopular. Hundreds of men go into the steam sheds in a year who in a few weeks go away disgusted. The ground is perished for want of cultivation. It is proposed to grant third, second, and first-class certificates to engineers according to ability and experience, and similar classes of certificates to firemen and engine boys. He suggests that for each grade corresponding uniforms should be provided, and he opines that the standing of the service would be raised 50 per cent. in a short time.

The portion of the volume specially devoted to the question of certificates of qualifications in the running service of the locomotive department is calculated to prove of great utility to the men themselves, even should the recommendations as to certificates never be adopted, for instruction is given upon every point from the lighting of the fire to the completion of the journey and cleaning of the engine ready for the next trip, whilst by way of appendix there is an excellent account of continuous brakes generally, and of the Westinghouse in particular. He mentions that in order to stop a train in the shortest possible distance Capt. Douglas Galton considers that the brake blocks should act upon every wheel in the train, that they should be applied with their full force in the least possible time, and that the pressure should be regulated according to speed and other circumstances, and should never exceed the adhesion of the wheels upon the rails. It might have been further pointed out that if the brakes be applied consecutively instead of simultaneously, commencing with the last coach or wagon and coming regularly forward, shock is almost entirely prevented, however quickly the whole of the brakes may be got into action. The

\* "Annual Record of Science and Industry for 1878." Edited by SPENCER F. BAIRD, with the assistance of eminent men of science. New York: Harper and Brothers. London: Trübner and Co.

† "The Model Locomotive Engineer, Fireman, and Engine Boy." By MICHAEL REYNOLDS, M.S.E. London: Crosby Lockwood and Co., Stationers' Hall court.

volume is of a thoroughly practical and useful character, and should be placed by every railway company within the reach of the members of their running service, as the more its contents are known in the engine sheds the greater will be the advantage to the companies.

**SCIENTIFIC PRESS SUPPLEMENT.**—With a view to bring together in a compact and readily accessible form the proceedings of the various scientific societies of California, and to furnish to the scientists of the State a record of the progress in other countries of the sciences to which they devote themselves, Messrs. Dewey and Co., San Francisco, commenced in February the publication of a monthly Scientific Press Supplement, and Messrs. Tribbner and Co., of Ludgate Hill, have undertaken the agency for it in this country. The new work was the more required as, the Californian Academy of Sciences not publishing their proceedings, the value of the paper read was lost except to the members attending the meetings. In the Scientific Press Supplement the papers will be printed in full whenever possible, and as the proofs will be submitted to the authors before publication accuracy may be relied upon; and, as the leading scientists of the Pacific Coast have promised to contribute articles, and the abstracts and translations of foreign publications are excellent, there is no doubt the periodical will be extensively patronised. In the first three numbers there are some very valuable articles, and the admirable illustrations which accompany them much enhance their interest. An excellent paper, by Dr. H. W. Harkness, reporting a case of timber destruction by a fungus which penetrates the growing tree, and honeycombs its heart without leaving any exterior marks, is given, and mention may also be made to papers on Insanity and Crime in Mining Countries, by the Hon. Alex. Del Mar, in which it is mentioned that there were 103 suicides in San Francisco last year. Of these more than 25 per cent. are attributed to losses in mining stocks, &c.; 14 to intemperance; and nearly 10 per cent. each to love and incurable disease. Love appears to be 25 per cent. less productive of suicide in women than in men, and there are no female intemperate suicides. Mr. Stillman, of the University of California, contributes a paper on the Artificial Synthesis of Organic Compounds, Geodetic Instruments of Precision at the Paris Exhibition and in European workshops; Artesian Wells; Foot hills of the Sierra; New Problems in Mensuration; the Genesis of Cinnabar Deposits; the Proceedings of the California State Geological Society; on Extinct Volcanoes and their relation to the Glacial Drift on Bernardino, a new mineral resin from San Bernardino County, California, by Mr. J. M. Stillman; and on Cheap Railways are among the titles of papers inserted, and these will suffice to show the wide range of subjects mentioned. Messrs. Dewey and Co. have undertaken a task the performance of which will be of great benefit to the scientific societies, and to the people of California, and scientists in this country, so that it may be hoped commercial success with attend their efforts.

### Greetings of Public Companies.

#### WHEAL BASSET MINING COMPANY.

A general meeting of the shareholders was held at the mine on Aug. 14, Mr. McKEAND in the chair.

The usual preliminaries having been disposed of, the statement of accounts was submitted, showing a debit balance of 46971. 15s. 5d.

Mr. R. MARTIN (the purser) said that there was 2074. calls to come in, which he considered would reduce their liabilities to about 26000. They had also much standing plant that could be disposed of, and most of that on North Bassett workings was paid for.

Capt. TREVENA expressed sanguine expectations that the bottom of Lyle's shaft would be reached in three months, and that they would then be in a position to drive on the lode.

Mr. WADDINGTON said a call of 7s. per share was necessary to balance their account, and they would then be solvent.

The CHAIRMAN, after referring to the operations of the last seven months, remarked that their accounts presented that day hardly represented them in such a good position as they really were. They had on the relinquished share account between 2000. and 3000. which did not appear on the balance-sheet, and altogether they were 400. better off than they were credited for. It would be necessary to make a call that day, and some shareholders who had recently come into the concern suggested that 10s. a share should be asked for. He did not fall in with that proposal, as they had some old adventurers still identified with the mine, who had responded nobly to the calls made upon them, and the committee would like them to retain their interest, so that they might have a chance of recouping themselves in the new mine. The loss on the past seven months' working had been 2010., and to meet this and other expenses he moved that a call of 7s. per share, payable on Sept. 5, be made. He thought that before long the shareholders would receive a dividend, for the mine was a good one, and second to none in the country. He subsequently referred to the liberality of Mr. Bassett, the Lord of the Manor, towards the mine, mentioning that for the past five or six years they had had comparatively no dues to pay, and this was a good thing for the mine. Not only had he done this, but he had assisted them in many other ways.

Mr. WADDINGTON expressed his belief that the success would be experienced long before they anticipated. It would come at a time when it would be more to their interests that had been attained two or three years ago. He did not think, however, that the present generation would see metal realising the high prices it did formerly, but that there would be a great improvement on the present tariff he did not hesitate to say.

The call was then agreed to, and the proceedings terminated.

#### BIRDSEYE CREEK GOLD MINING COMPANY.

The following directors' report will be presented to the eighth annual meeting of shareholders, on Thursday:-

The directors have now to present to the proprietors the eighth annual report of the company's proceedings, and it is with pleasure that they are able to call the attention of the proprietors to the evidence it affords of a return to a more prosperous condition.

The accounts duly audited, show that during the past year 3554.26 ozs. of gold have been obtained, realising 13,585. 7s. 11d.

Since the closing of the accounts on April 30 a profit of \$11,750 has already been advised on account of the present financial year. The total indebtedness of the company in California has been cleared off; and the directors trust that by the end of the current water season the sum of 2000. on debit account will represent the whole of the company's liabilities. Twenty debentures of 50. each have, in accordance with the Trust Deed, been drawn for repayment on Oct. 31 next.

A report on the various claims by the company's superintendent is presented. This report, though perhaps somewhat disappointing as to the results thus far obtained from the Waluppa and Red Dog claims, nevertheless holds out hopeful anticipations as to their future productiveness.

The "Debris" Suit, in which this company, in common with the other hydraulic mines in the neighbourhood has been involved, will it is expected, come up for hearing before the Supreme Court of California in November or December. It is satisfactory to learn that but little doubt is entertained as to the result being favourable to the mining interests of California. The directors believe that the position of the company will not be in any way prejudiced by the adoption of the "New Constitution" in that State.

The director who retires by rotation is Mr. J. T. P. Peckey, who, being eligible, offers himself for re-election.

The auditors, Messrs. C. O. Rogers and C. Hopkinson, also offer themselves for re-election.

**THE BERKHAVEN MINING COMPANY (Limited).**—The annual meeting of shareholders was held in Dublin on Aug. 12 (Mr. E. Fottrell, J.P., presiding). The secretary and manager (Mr. Robert Clegg) read the notice convening the meeting, and submitted the directors' report. The accounts ending June 30 last were passed unanimously, and they showed that a profit of 6117. 15s. 6d. on the year's workings remained, after having expended 7677. in sinking a new shaft on the Kealogue part of the property. The chairman expressed hopes that the mines would more than pay costs for the coming year, even with the present price of copper, but although not promising, a call would not be made. If it was found necessary the shareholders should be consulted previously. The meeting ended with a cordial vote of thanks to the chairman and directors for their attention to the general business.

**MRSRS. HENRY BRIGGS, SON, AND CO. (Limited).**—The annual meeting of shareholders was held at Whitwood, near Normanton, on Wednesday. Mr. Henry Currier Briggs, the chairman and managing director, presided, and there was a good attendance of the shareholders. The report of the directors for the year ended June 30, was read by Mr. J. H. Phillips, the secretary. It was stated that notwithstanding the generally disastrous conditions under which the iron and coal trades had been carried on during the last twelve months, a gross profit of 12,585. 19s. 9d. had been realised by the company, and the directors recommended a dividend of 2½ per cent. The Chairman, on reading the adoption of the report, said that to his mind the report was very satisfactory. During the year they had had a very troublous time, for there had been failures and rumours of failures on all sides in the commercial world, and wars and rumours of wars in the political world, which had rendered the task of conducting the business of a company like that by no means easy. Referring to the items in the accounts, the chairman alluded to the large sum paid by the company for income-tax, and said he was afraid if the present Government continued in office the amount would increase rather than decrease.—Mr. Henry Broadbent, one of the directors, seconded the motion, which was heartily supported by Mr. B. Watson, grocer, Wakefield, who spoke in very complimentary terms of the manner in which the business of the company was conducted and its accounts kept.—After a few questions had been asked, and satisfactorily answered by the chairman, the report was adopted.—Mr. Broadbent, one of the retiring directors, was re-elected, and Mr. John Ingram, of Heath, was appointed a director in the place of Mr. Wm. Fletcher. The voting for the election of working director resulted in the appointment of Mr. James Pyrah, by 171 votes. Mr. John Masterman, of Wakefield, was re-appointed auditor to the company; and the proceedings were brought to a close with votes of thanks to the various officials of the company.

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#### SAFETY COTTON BLASTING POWDER.

Amongst the new explosives now being introduced in mining the safety cotton blasting powder, manufactured by the Liverpool Cotton Powder and Ammunition Company at their works, Melling, near Liverpool, recently fitted up with new machinery, appears to be making progress. It is claimed that in strength it is equal to dynamite, whilst in action it gives off neither flame, smell, nor offensive smoke. It will be recollected that the powder was publicly tested in the presence of a large number of persons about two years since, when cartridges were heavily hammered, fired into with a bullet from a rifle, and lighted by charges of ordinary black powder without the slightest explosion, the cartridge merely burning away. The company have received many flattering testimonials as to the value of the safety powder in actual use, and one of them—that of Mr. E. B. Thornhill, M.I.C.E., the Liverpool engineer of the London and North-Western Company—may be noticed. He used the powder to deepen the channel leading up to Garston Dock, at a point where the rock is only exposed at extreme low water of spring tides, and he states that holes were drilled to a depth of 2 feet, and charged with two ½-lb. cartridges after the holes had become filled with water. The rock was shattered into such small pieces that there was afterwards no difficulty in raising it with an ordinary dredger. A number of boulders, about 2 feet diameter, and also projecting pieces of rock, were shattered by placing one ½-lb. cartridge on the surface, without drilling a hole to receive it. The results were most satisfactory, and he should have no hesitation in using this powder again, under similar circumstances, in preference to any other blasting material. From experiments he had made he was convinced of its great power and safety, the latter being a most important element with those responsible in the execution of works.

Where employed for blasting purposes in mines the safety cotton powder has given equal satisfaction. Capt. T. Jenkins, of the Burra Mine, writes that the smokeless blasting powder answers admirably. It is quite as strong as any explosive they have ever used, and gives off no smoke or fumes to annoy the men, who can begin to work in close places almost immediately after blasting; he can recommend it most strongly. The opinion of Capt. Thos. Roach, of Polrose Mine, is equally favourable. He writes that the smokeless blasting compound supplied to this mine for nearly 12 months has now been definitely proved by them to far surpass any other blasting material they have ever used. Its economy is especially shown in places where ventilation is sparse, as the miners are enabled to immediately return to their work after blasting. One other important advantage they find is that the compound shatters forcibly downwards. This they have experienced practically by holing a winze to a rise,

where the ordinary time and labour were considerably facilitated. Others who have tested the powder give equally satisfactory reports, but these will suffice to show that the compound is worthy of the attention of miners generally.

#### ARTIFICIAL MANURE MANUFACTURE.

Within the last ten or fifteen years considerable attention has been given to the manufacture of superphosphate manures, and Messrs. Lightfoot and Co., of Mülheim, on the Rhine, about 3 miles from Cologne, have been establishing a chemical manufactory and artificial manure works, in which the mineral obtained is conveniently and economically treated. The property has now been sold, subject to a charge of 8000L for 82,000L in fully paid shares to the Colombia Chemical Factory, Manure, and Phosphate Works, which has been formed with a capital of 200,000L, in shares of 10L each, but the vendors' shares only are at present to be issued. It is now proposed to issue 40,000L worth of debenture bonds, forming a first mortgage charge on all the assets and property of the company, bearing interest at 6 per cent. per annum, payable half-yearly, and redeemable, 20,000L in five years, 10,000L in seven years, and 10,000L in 10 years, the bondholders having the option of exchanging the bonds for ordinary shares at the date of redemption. It is proposed to apply the proceeds of the bonds, 8000L, to the liquidation of the existing charge, which will make the bonds a first charge, and 10,000L to the purchase of stock and materials on hand, leaving 22,000L for working capital, which it is considered will be ample for the purposes of the concern.

The property to be transferred to the company includes the houses, plant, and machinery in the works at Mülheim, the steam phosphate grinding and preparation works, brick yards, &c., and also an extent of 1663 English acres of phosphate mining lands, in the neighbourhood of Weilburg and in the valley of the Lahn, three hours from Coblenz, from which the mineral phosphates used in these chemical works are obtained, the whole forming, to use the words of the prospectus, a complete and well organised industry. It is mentioned that the chemical works at Mülheim comprise about seven acres of freehold land, the buildings occupying upwards of four acres. The works are on the main road, and are connected by a private siding with the Berg Markische Railway and with the Rhine, being thus in direct communication by rail and water with local markets and those of neighbouring states, as well as with England, France, and the Netherlands, and the freights are low. These works are fitted with the most suitable machinery and appointments, everything being so devised and arranged as to secure the largest production with the smallest possible expenditure of manual labour. The cost of labour is exceptionally low. There is a dwelling-house for the resident manager, offices, laboratory, labourers' cottages, stables, and a small tramway through all the principal buildings, connected with the railway siding named, and various other adjuncts necessary to works of this character on a large scale.

The property has been inspected and reported upon by J. Arthur Phillips, whose name is well known to the readers of the *Mining Journal*, and by Mr. Rudolph Schmidt, of Bonn. Mr. Phillips considers that "during periods of ordinary prosperity this establishment ought, with good management, to afford very satisfactory returns for the capital expended." Mr. Schmidt, while remarking that "the value of the chemical works, exclusive of the concessions and contracts, and of what may be termed the goodwill of the manufacturer, must now be at least 50,000L," adds—"I can but repeat what I have already implied, that the Colombia Works are so complete in their details, and so extensive in their capabilities, that the only limit to their operations and to their consequently profitable results is the amount of capital with which you may determine to work them." Calculations of the probable profits, based on these reports and on the operations of the past, have been made, and it is estimated that the returns from the first will be sufficient to pay a dividend of 10 to 15 per cent. on the entire capital, and will go increasing as the business expands. As evidence of the soundness of the business, no bad debt has been made in the past three years. It is observed that Mr. Schmidt, in his report, values the chemical works and land adjoining at 50,000L, and that it is not too much to assume that the 1663 acres of phosphate lands, embracing 28 distinct mining sets, are worth a similar sum; so that the debenture-holders, who hold a charge upon all the property, stocks, and assets of the company, have ample security for their money. The reports mentioned, especially that of Mr. J. Arthur Phillips, are instructive and exhaustive, and those who carefully study them before deciding upon the course they will adopt will have no ground for subsequent complaint that every detail was not placed within their reach.

#### REPORT FROM THE FOREST OF DEAN.

Aug. 21.—The half-yearly gale audit and dinner came off at the Speech House on Tuesday afternoon last, when the following gentlemen were present:—Sir J. Campbell, Mr. F. Brown, deputy-gaveller; Mr. E. Crawshay, Mr. J. T. Thomas, Mr. T. B. Brain, Mr. A. Thomas, Mr. G. H. Hough, Mr.

wages are low. The tin plate trade is acting upon the self-defence maxim of reducing production by playing one day a week—in some cases it is said two days short time is adopted. The production of pig-iron and the raising of iron ore are both very limited; and, notwithstanding that there are slight indications of improvement in the iron trade elsewhere, in Dean Forest the business looks more like being in a state of commercial coma—a symptomatic condition frequently premonitory of death—or of the crisis which precedes improvement and convalescence. We hope it is only symptomatic of a coming change for the better. On Saturday last the Meers, Crawshay put up notices that all contracts would cease with the present month, and that the furnaces are to be blown-out. Notwithstanding such a sweeping announcement, it is only understood by some to point to a further readjustment of wages, and possibly to one furnace being blown out. Things generally in the Forest are at a low ebb—in West Dean especially—about one-fifth of the rateable property being void.

In East Dean matters are not quite at such a pass, but are bad enough, the pinch of poverty being felt there, but not equally as in West Dean. Public burdens are increasing, the rate just issued being 15 per cent. upon the rateable value of the property in the township. If people had more public spirit, the public burdens might be lightened to some extent, as a more careful economy could then be brought about, but people will not move in such matters until they feel the smart, when it is frequently too late to remedy the evil. So Englishmen still "grumble and pay," instead of being wise in time. We trust, however, that as education spreads, and the people avail themselves of the cheap newspaper literature of the day, intelligence will permeate the masses, and an improved state of things be the outcome of the process. Let us hope that a time will arrive when some popular balmaker will be able to give us some inspiring verses of a "good time," without that sly inuendo, "wait a little longer," being added.

#### FOREIGN MINING AND METALLURGY.

An adjudication is to take place at Gand, on Monday, for the supply of 772 tons of coal required for the communal schools and other public establishments. Although this is but a small affair, it is likely to be keenly contested for in the present period of depression. The Meuse Company is constructing an intermittent rotary drainage engine on the Kley system, which is intended for a colliery in the Spanish province of Jaen. The engine will be of 200-horse power. There would not be much in the affair but for the fact that hitherto the Spaniards have obtained their mining machinery exclusively from England. Belgian mechanical firms have now obtained a footing in Spain, and they are improving their opportunities. Special tariffs have been introduced on the Belgian State Railways for the conveyance of coal, coke, and briquettes in deliveries of 100 tons at least, and intended to be exported over sea.

The tone and aspect of the Belgian iron trade have experienced little change. It is feared some firms are working at a loss, and two or three establishments are said to be on the point of blowing out furnaces. Some fortunate concerns which produce specialities and have a settled connection are still disposing of their products upon remunerative terms, but these establishments are, after all, doing only a comparatively limited business. The great rolling mills have been compelled by the force of competition to reduce their prices to the extreme limits of cheapness, and until quotations revive they will not realise any profits, but will merely vegetate. Industrials who work up raw iron state that it is offered to them for nothing; this is, of course, a figure of speech, but still there is, unfortunately, a certain amount of truth and accuracy in it. Contracts for 121 carriages of various types are about to be let for the Belgian State railways. A contract has also been let for a locomotive shed at Tillemont. M. Ghilain, of Liège, submitted the lowest tender (4700£). The cost of this shed was estimated at 5904£. New boilers are being fitted into the Comtesse de Flandre, a mail steamer running between Ostend and Dover. The old boilers, which weigh about 41 tons, are to be taken in part payment.

The Paris coal market has presented much the same aspect as for some time past. The daily sale is limited to the most pressing requirements of consumption. MM. Breton and Co. have contracted to supply the prisons of Paris with coal for a year at 31s. 2d. per ton. The Anzin Company has contracted to supply coal for the postal service at 29s. 6d. per ton. M. Bondonneau, of the Quai Jemmapes, has undertaken to supply Belgian coal for the Ecole Polytechnique upon the following terms:—Charleroi coal, 32s. per ton; and Mons coal, 35s. 4d. per ton. Apprehensions of a bad beetroot crop this year in France have subsided; the proprietors of sugar works are, however, still giving out orders very sparingly. The industrial consumption of coal has not increased generally in France.

The laying of a second set of rails on the Warsaw line of the Great Russian Railway was completed in 1878. The cost of this work was estimated at 4,540,067 roubles. The real cost has not yet been definitely settled, but it will be something less than the estimate. An expenditure of 12,407,873 roubles has been made for the purpose of putting the Nicholas (Moscow and St. Petersburg) line of the same system in a good condition. The administration has reconstructed a large number of bridges, and some important works are in course of execution for the purpose of modifying the route of the line in the Weresia ravine. The object of the new route is to obviate an incline, which often involves the employment of two engines for each train. A second line of rails has been laid on the Moscow and Korow section of the Nijni-Novgorod line. Traffic was commenced over this duplication in September, 1878. The works involved an outlay of 3,161,700 roubles.

#### FOREIGN MINES.

RICHMOND CONSOLIDATED.—Telegram from the mine at Eureka, Nevada: Week's run, \$35,000, from 740 tons of ore. Doré bars from refinery, \$33,000. Tired No. 2 furnace with coke alone; production reduced one half. Now using mixed fuel.

—Rickard, Eureka Nevada, July 30: Since my last there is no change of importance to mention from any of the different workings in the mine. The 200 cross-cut has been drifted 12 ft. in very favourable ground for ore. The 400 west quartz drift has been advanced 17 ft. without any change in the ground. The 400 south-west cross-cut has been drifted 17 ft. in hard limestone. The 500 north drift has been advanced 11 ft. in very hard limestone. The 600 west and south of the South Fissure drift, has been advanced 22 ft. in low-grade iron ore, the present end is looking very favourable for good ore. The chambers are without much alteration since my last; they are turning out the usual quantity of fair grade ore. The machinery both in mine and smelting works is in good working order.

ALMADA AND TIRITO CONSOLIDATED.—Telegram from Mr. Clemens, July 26: Profit for the second quarter of 1879, \$9400. I have remitted you bullet \$2500.

EBERHARDT AND AURORA.—Extracts from Capt. Drake's letter, dated July 28: Progress report for week ending July 26—Eberhardt upraise: Distance run to July 19, 40 ft.; run for week ending July 26, 10 ft.; for month of July, 50 ft.; total distance to July 26, 50 feet.—Crosscut South from Raise: Total distance to July 26, 12 ft.—Remarks: There has been no material change in the character of the ground since my last report.

PITANGUI (Gold).—Mr. T. S. Treloar (Pitangui, July 17) reports—The works in connection with the communication from the adit to the surface I am pleased to say have been completed, the rise having hoisted to the shaft on the 12th inst.; we are now, therefore, in a position to cut into the lode without fear of being overpowered by water. Two levels for this purpose have been commenced—one 13 fathoms and the other 20 fathoms from surface. The first-named is a continuation of the one from No. 2 shaft to the rise, and will be of service for letting down the water to this depth, but we are doubtful whether it will go under the old workings on the Ouro Poder vein, consequently a deeper level is being driven from the rise, to be followed eventually by another or more, as may be considered advisable, thus draining the ground gradually to the horizon of the adit. The line found at surface continues disordered, owing to the crushed condition of the jacutinga, and we have little or no stuff from it at present suitable for treatment.

SANTA BARBARA (Gold).—T. S. Treloar, Par, July 15: During June 914 tons of mineral were stamped, producing 3286 oits of gold, equivalent to 3595 oits per ton of stone stamped. This product of 3286 oits, valued at 8s. 6d. per oit, amounts to £196. 11s.; and the estimated working cost for the month at exchange 19s. d., being 85s. 19s. 10d., leaves an estimated profit of 540£. 10s. 2d. for June. Mr. Treloar, acting in the absence of Mr. Hilkote (who had left the mines on July 6 for the purpose of proceeding to England for the benefit of his health) advised that there was no change in the mine calling for remark. The yield of the mineral showed an improvement of 388 oits per ton as compared with that derived during the month of May. The amended law relating to the gold tax came into force on July 1. The mine captain reports that the quantity of ore raised during the month amounted to 1147 tons, of which 233 tons were rejected as refuse stone, and 914 tons treated at the stamps. Average quantity of ore raised per ton for the month 30 2 tons, or per hole bored 0.628 ton.

ISABELLE (Gold and Silver).—July 26: Foreman's Report: Total distance from monument to face of tunnel, 603 feet. Distance run for the week, 37 feet. Number of shots, 10. Rock about the same as last report.

PLACERVILLE.—J. Thomas, July 28: During the past two weeks the 4th level has been driven north 9 ft., making a total length of 215 feet. The fifth level has been driven north 10 ft., making a total length of 30 feet. Extracting ore.

—T. Price, July 30: Mr. Thomas reports that the quartz in the winze towards the 500 ft. level is very good, and also that the quartz at the north end of the 400 ft. level has improved considerably.

—Telegram.—T. Price, Aug. 18: Have crushed another 278 tons of quartz, yielding \$3000.

SENTEIN.—August 18: The manager's report is as follows:—Everything goes on uninterrupted throughout the whole of our works. At the mine our No. 4 level end is again much improved, and a great deal easier for driving, and the stops continue to yield silver-lead and blende ore of the usual quality. All necessary arrangements have been made for increasing the number of miners,

and we are now in a position to break a very much larger quantity of ore than we have ever yet done; in fact, we can increase the quantity according to the number of men employed. We have enlarged our tipping place, and we are now ready to charge a larger number of carts than at present employed. Seeing the necessity of largely increasing our returns of ore we are pushing forward as fast as possible the completion of our large set of new jiggling machines, and our mechanics are working night and day. We calculate to get the same to work in about a fortnight from this date, when we believe our returns will be of a very satisfactory nature. The No. 3 crusher, which we referred to in our last report, was left here by the former proprietor, and with a little alteration and repairs it will be made available for the reduction of our mixed fine ore, of which we have now a large quantity in stock, and which gives by assay a very good result of silver-lead ore. This crusher will be erected inside the dressing house and by our No. 1 crusher water-wheel at a trifling expense, as there is no house to build. The beams are delivered, and nearly ready to go into position. In consequence of the national fete of France falling on Friday and Saturday we have not had brought down from the mine the quantity of mineral we anticipated, as a large number of the wagons have not gone up to the mine for those days. Our dressing is going on satisfactorily, and we are gradually increasing our quantity of returns. Ore raised during the past week, 20 tons.

Capt. Edwards also reports as follows, under date Aug. 15:—We are now engaged in fixing the new jiggling machinery at the higher dressing floors close to the crusher, which will be worked by the same water-wheel that works the stone-breaker. I will send in a few days a sketch of the new works now in hand. The ore from the stone-breaker will be put direct into the crusher, which is only about 12 ft. from the crusher rolls, and is at the same floor, and from the crusher the ore will be washed direct into the separator, and from there it will be lifted into the jiggers by the elevator, and worked from the same water-wheel. With regard to the revolving picking table we must have time for all these appliances; it has not yet been fixed, as we are now handpicking all the best lead and blende which is not put to the stone-breaker. This machine will crush ore enough to keep going both the crushers without any spallers. The elevator will pass all the ore to the jiggers except the very fine, which is passed over the bubbles. With reference to the ore on the floors which you refer to we have about 75 tons which have passed through the jiggers, but it is mixed with blende, and must be crushed again in order to separate the lead from the blende. This ore will average about 25 per cent. of lead. In addition to the 25 tons I have mentioned we have on the floors an immense quantity of ore already crushed, but our present jiggling power will not allow us to treat it. When our new jiggers are finished, and the little crusher left here by Mr. Kaulek is fixed, all this ore will be crushed and separated as the work progresses. Up to this time we have taken out only what we (in mining terms) call crop or solid grain ore. A great quantity of lead and blende when pulverised by this little crusher will be treated and prepared for market, which will be equal to our present average. In about three weeks from now, if we are not delayed by the ironfounders, we shall put to work our great set of jiggers at No. 1 dressing-floors, when we shall be able to treat a much larger quantity of ore, with a proportionate result. I wish again to say that our ore is difficult to separate, but we are improving the separation every day, and nothing as far as I can judge is wanting but a little time to realise very satisfactory results. The mine is looking just as usual, any quantity of mineral of good average, and I trust your board will give us a little time to carry out our work here at the dressing-floors.

#### THE WEEK.

SATURDAY, AUG. 16.—Several large "bear" accounts in railways were closed, leading to a material rise in price. From 112 York, A, advanced to 114. North British touched 73, Brighton, A, 109½, and Berwick 132½. Sheffield rose in sympathy with York, A, and closed at 74. Great Eastern was only moderately active, the improvement being confined to 14. Mining shares met with a strong demand, but very few could be obtained at fair prices. Of late the market has been in a very unsatisfactory condition, all "buyers" or "all sellers."

MONDAY.—The return of wet weather checked somewhat the upward tendency of railways. North British receded 1/2. Brighton, A, at one time showed a fall of 1 per cent.; but a rally late in the day reduced this to a quarter. Mining shares were again in good demand. South Cardon was quoted 5½ higher, and West Seton 2½. Wheal Crebore were firm at 3. Great Laxey and Van rose a further 10s. It is not likely that holders whose patience has been so sorely tried are going to sell directly matters look brighter. If the demand for mining shares continues much higher prices must consequently prevail.

TUESDAY.—A further general advance took place in mining shares, a good business being done in the following at increased prices:—Tin-croft, Wheal Grenville, Wheal Crebore, Wheal Pevor, Linares, Van, Great Laxey, Roman Gravels, Sierra Buttes, and Tharsis. One or two iron shares also met with enquiry. Ebbw Vale were dealt in at 4½, Rhymey at 18½, and the new shares at 4½. Cardiffs were offered at 15s., and Bilsons at 30s. Railways were depressed, though no great fall was recorded. Great Eastern receded to 54½, and York, A, to 114½. East Argent rose 9s., a dividend of 5s. per share was announced.

WEDNESDAY.—The Great Western dividend was announced as one of 3½, with 16,000£ carried forward. This came on the market rather as a surprise, not more than 3½ being looked for, and the stock advanced straight away from 94 to 96. The wet weather checked any rising tendency elsewhere, but most stocks were very strong, and only requiring a few fine days to effect a great alteration. North-Eastern traffic showed a decrease of over 14,000£, but after falling 1 per cent. the stock left off unchanged.

THURSDAY.—Railways again showed a firm front notwithstanding the wretched weather. Brighton, A, touched 109 and North-Eastern 133. Mexican, 10½ to 10¾; Mexican Railway, 1½ to 1½; ditto First Preference, 7½ to 7¾; ditto Third Preference, 3 to 3½. Erie securities were very dull, the Second Mortgage fell below 77. Van shares were dealt in at 15½, the circular announcing a reduction in the output having frightened a few of the recent buyers. To-morrow the Stock Exchange will be closed at 3 o'clock, and altogether on Saturday. Illinois central, 90½ to 90¾; Reading General, 75½ to 76.

FRIDAY (Opening).—Railways are much the same as last night, though the weather is greatly improved. Brightons are offered at 108½, and Berwick 133. Erie securities are better, the price being telegraphed from New York 3½ higher. The shares are 27½, and the second mortgage 76½. Great Western, 96½, 94½; District, 70 to 70½; North British, 71½ to 72; Egyptian Preference and Unified are each 5½ better; Ottoman Bank, 9½ to 9¾. Mining shares continue in good demand. Tankerville, 3 to 3½; Linares, 3½ to 4½; Alamillos, 1 to 1½; Don Pedro, 3½ to 4½; Richmond, 7½ to 7¾; Wheal Crebore, 2½ to 3; Nouveau Monde, 3 to 3½; Van shares remain dull at 15 to 15½.—Tico o'clock: Brightons have been down to 108½ to 108¾, but are now firm again at 108½ to 109; Caledonian, 91½ to 91¾; York, A, 114 to 114½; Wheal Crebore advanced to 2½, 3½. Business done in Van, at 15½. Erie shares, 27½ to 27¾; Second Mortgage, 76½ to 78½. Cuba Submarine, 6¾ to 7. Direct United States, 10½ to 10¾. Direct Spanish, 1½ to 2½. Eastern, 7¾ to 8. Globe, 4½ to 5. Great Northern, 8½ to 8¾. Reuter, 9½ to 10. Three o'clock—All the markets closed fairly firm. The business done, however, was extremely moderate, several stocks not having been once dealt in. Brighton, A, 108½ to 109. Berwick, 133 to 133½. Caledonian, 91½ to 91¾. North British, 71½ to 72. Great Eastern, 54½ to 55. Illinois Central advanced to 90½, and Atlantic, First Mortgage to 34½. No improvement was shown in Erie. Cardiff and Swansea Colliery, 10s. to 15s. Chapel House, 1½ to 8½. Bilson and Crump, 1 to 1½. Newport Abercarn, 4½. Alltarn, 3½.

FERNAND R. KIRK.

GENERAL MARKETS.—Markets close firm, but show very little change for the week. There has been some improvement in English railways, especially in Great Western, on the dividend, which was particularly satisfactory, 3½ per cent., the same as last year, but carrying forward a larger balance. Most of the stocks of a speculative nature are better, chiefly owing to the closing of "bear" accounts. Foreign stocks are rather dull, Argentine being exceptionally good. Grand Trunk and Great Western of Canada are better on the resignation of the Chairman of the latter company. The English funds are firm. Mines have been very active, the chief business having been in Wheal Crebore, Carn Brea, Cook's Kitchen, South Frances, and Wheal Pevor.—W. H. H. WATSON: 1, St. Michael's-alley, Cornhill, E.C.—Friday Morning, August 22.

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#### THE TEMPLE MINE—SPECIAL REPORT.

Aug. 16.—The No. 1 level has now passed through the first course of ore discovered in No. 2 and passed through by that level as well as No. 3, and as there is a very good branch or cross lode going off to the north, a few fathoms behind the end, the men have been put to follow it, and, at the same time, to stop away the ground near the winze, where it is proposed to sink a shaft in the ore ground below No. 1 level. The No. 2 level is being driven on with all possible speed in a lode of the most promising character, composed of spar, lime, blende, and good strings of lead ore; when last taken down it produced fully 10 cwt. of lead per fathom, and from appearance an improved product is confidently expected during the next few fathoms driving. This end is now entering into that part of the company's grant where good ore deposits are expected to be met with; in fact, that particular point which was aimed at when the company commenced their operations has been nearly reached, where it is intended to throw out the cross cut to intersect the side lodes, which at surface present every indication of being rich in depth, and it is considered that at the depth of No. 2 fathom level, present end, 35 fathoms from surface, these side lodes will be found productive. The proposed plan after extending the No. 2 level about 10 fms. further into the mountain, is to drive the cross cut in a north-western direction, or at right angles with the lode, for a length of about 50 fms. to the northern boundary of the sett, within which distance several lodes and branches may be expected to be intersected, some of which will no doubt be productive, as they have been found rich, and are extensively worked upon in the mines both to the east and west. The No. 3 level is suspended temporarily pending the result of the next 10 fms. driving in No. 2, and the men have been transferred to No. 1 level to assist in stopping and cutting away the ground above the point where it is intended to sink in the ore ground below No. 1. On surface we have employed, in addition to one smith and two carpenters, engaged on some additional dressing apparatus, and preparing for the erection of stone-breaker, two men laying tramway to proposed incline, two men quarrying stone for wheel pit, two men cutting ground for foundation, and two masons laying foundation for the 40 ft. wheel pit, two men and one girl attending crusher and jigger, &c., and the engineers preparing the necessary gear for driving stone-breaker with the 30-ft. wheel. The hands employed underground, in addition to six men driving the No. 2 level west, and one man tramping the ore to the dressing-floors, are 24 men engaged in stopping Nos. 1, 2, and 3 levels. It is estimated that the average produce of the stopes in the various levels is equal to fully 1 ton of lead ore per fathom. The mine is well ventilated, and fully supplied with tram ways throughout each level. The machinery which is on the mine, as far as completed is in excellent order, and working well. The 30-ft. and 14-ft. water-wheels are sufficiently powerful for crushing and dressing large quantities of lead ore, and the crusher and jiggling apparatus are equally efficient. The erection of the stone-breaker, 40 ft. water-wheel, and drawing and pumping machinery will be proceeded with as rapidly as circumstances will admit. A good stock of lead ore will be broken with as little delay as possible, when dressing operations will be commenced in earnest; a sample of the small quantity of lead already dressed has been sent to be assayed, and it is hoped that an advance in the market value will take place before the company determine to make any sales. The exploring levels have not been so favourable during the past few months as previously,

but an improvement in No. 2 may be expected, and should it occur the value of the property will be materially increased, or should the course of ore already laid open be found to improve, or even to continue its present produce in the sinking below the deep adit—No. 1—level, the mine will become more valuable. Materials are being supplied at moderate prices. Labour is particularly cheap, and on the whole the prospects of the company are good.

Extract from weekly report received at the company's office, 3, Great St. Helen's, London, on Thursday:—

Temple Mine, Aug. 20: We have cut down a little more of the lode in the end of No. 2 level, and are happy to say it continues to improve gradually; the produce of lead may now be estimated at fully 12 cwt.





**WEST WHEAL PEEVOR.**—W. T. White, August 21: The shaftmen are engaged this week in dividing the lift, which when done will be more convenient for sinking. This will be completed in the course of a few days, when greater progress in sinking will probably be made. I can speak of no change in the 10 west, on the south part of the lode, and in the cross cut driving north at this level small branches carrying a little tin are continually being met with. We calculate to intersect the other part of the lode in about 4 fms. driving, when I anticipate some time very不久.

**WEST WHEAL TOWTS.**—Aug. 22: Taylor's Shaft: The lode in the 155, west of shaft, is 5 ft. wide, yielding 1 ton of copper ore per fathom, and some stones of tin. In the 145, west of shaft, the lode is 4 ft. wide, and yielding 2½ tons of ore per fathom. In the 145, east of No. 1 cross-cut, the lode is 3 ft. wide, and yielding a little saving work for copper ore. In No. 2 winze, below the 145, west of shaft, the lode is 5 ft. wide, and yielding 1½ tons of ore per fathom. In the 135 cross-cut south, the ground is a light coloured killas, and better for driving than we expected. In the 125, west on south part of the lode, the lode is 4½ ft. wide, and yielding 4 tons of ore per fathom. In the 125 east, on south part of the lode, the lode is 5 ft. wide, and yielding 4 tons of ore per fathom. The lode in the stop in the back of the 145, west of shaft, east of No. 2 winze, is 2½ ft. wide, yielding 2 tons of ore per fathom; worth 10/- per fathom. In the stop in the back of the 145, west of shaft, west of No. 1 winze, the lode is 3 ft. wide, and yielding 2½ tons of ore per fathom; worth 12/- 10s. per fathom. In the stop in the back of the 145, east of No. 1 winze, the lode is 6 ft. wide, yielding 4 tons of ore per fathom; worth 20/- per fathom. In the stop in the back of the 145, west of shaft, west of No. 2 winze, the lode is 4 ft. wide, and yielding 3 tons of ore per fathom; worth 15/- per fathom. In the stop in the back of the 135, west of shaft, east of No. 2 winze, the lode is 5 ft. wide, and yielding 4 tons of ore per fathom; worth 20/- per fathom. In the stop in the back of the 135, west of shaft, west of No. 1 winze, the lode is 3 ft. wide, and yielding 2½ tons of ore per fathom; worth 12/- 10s. per fathom. In the stop in the back of the 135, west of shaft, west of No. 4 winze, the lode is 4 ft. wide, yielding 3 tons of ore per fathom; worth 15/- per fathom. The 135, west of shaft, is suspended, and the men are put to drive the 135 cross-cut south. The stop in the back of the 135, west of shaft, is suspended, and the men put to drive the 125 east of cross-cut on the south part of the lode.—Richard's Shaft: In the 95, west of shaft, the lode is 4 ft. wide, yielding stones of ore, but not sufficient to value. In the 65, west of shaft, the lode is 3 ft. wide, with occasional stones of ore, and letting out a good deal of water, nearly all of which is coming from the present end.

**WHEAL CREBRO?**—John Andrews, Aug. 19: In the 120 east there is no change, but we are now crossing towards the south lode. The lode in the 125 east is worth 10/- per fathom. The lode in the 125 driving west from the bottom of the 108 winze's worth for the part carried—6 ft. 35/- per fathom. In the 108 crossing south we have cut into the south lode 6 ft.; we are not through it yet, but so far as cut into it is worth 30/- per fathom. In sinking and stopping below the 108 the lode is worth 10/- per fathom. The lode in the stop in the back of the 108 is worth 12/- per fathom. There is no change in the 48 east.

**WHEAL CREBRO?**—John Andrews, Aug. 21: I beg to inform you that we have to day cut through the south lode in the 108 cross-cut, which is 8 ft. wide, and worth 3/- per fathom. All other points are without change.

**WHEAL PEEVOR.**—W. T. White, Jos. Pryor, Aug. 21: We can speak of no material change in either of our points of operation since our last report, all of which still maintain their usual productiveness, especially the lode in the 80 and 86 fm. levels, in the latter of which the lode is very large and rich in quality. The 26 is also improving as we extend west. We expect soon to communicate the main rise with the deep adit level, which will greatly facilitate our present operations. Our usual returns of tin are being made, and last week we sold 60 tons at the advanced standards.

**WHEAL UNY.**—W. Rich, Matthew Rogers, Aug. 18: The mine is again drained to the bottom, and the 172 east, west of Hind's shaft, is being urged on by six men. The lode in this end appears to be increasing in size as we extend, and is yielding low quality tinstone. There is an increase of water in the 160 end, east of Gooing's shaft, but the lode is poor. The 160 end west is worth 9/- per fathom. The 130 end west yields a little tin. The 130, east of King's, although unproductive at present, yet it looks promising to improve.

**LEAD MINES—THE PRICE OF LEAD.**—When Leadville, in America, was discovered its production of lead was to have completely swamped the lead market. How different the result. The latest authenticated advices show that if the mines of Leadville were to be worked for all they are worth the yield of bullion would not exceed 50 tons per day, and at that rate the mines would be completely exhausted within a year. No miner of experience, good judgment, and disinterestedness pretends to claim that the carbonate deposits of Leadville go to the deep.

**PATELEY BRIDGE (Lead).**—The important announcement is made in this week's report that the hard bar of ground which last week had reduced the value of the Rake vein in the sump sinking below the 30 fm. level is fast disappearing, and the lode rapidly improving. The manager writes—"There is a splendid lead coming in again underneath, consisting of beautiful gossan, quartz, and rich lead ore, worth of the latter fully 3 tons per fathom, with every prospect of a further considerable improvement, thus proving the continuation of the ore body in depth as well as its rich character, although it may at time vary a little in value." Referring to the 30 fm. level east, upon the same vein, the manager says:—"It is from 5 ft. to 6 ft. wide, producing fine boulders of lead ore, and looking promising."

**WEST PATELEY BRIDGE (Lead)—THE VALUABLE DISCOVERY.**—The advice to hand this week state that the Rake vein in the 56 north-west has further improved; it is now a solid leader of lead ore upwards of 20 in. solid, and worth more than 6 tons per fathom. Upwards of 20 fms. have been driven through a continuous ore body, averaging per fathom from 5 to 6 tons of 80 to 90 per cent. pure lead. This 56 is the pioneer level, extending into virgin ground, in advance of which the company owns upon this Craven Cross lode more than half-a-mile of unexplored ground.

**WHEAL AGAR.**—The cross-cut at the 225 is extended 15 ft. into the lode, and sample assayed gives 1 cwt. 9 lbs. of tin per ton of stuff. So far as seen the lode is valued at 30/- per fathom: 381 tons 7 cwt. of tinstone for sale on Friday. The stamps have been put to work on low produce tinstuff.

**BRYN GLAS.**—We are informed that the capital to work this valuable mine is being taken up privately, and if so it is doubtful whether any prospectuses will be issued to the public.

**BRYN GLAS.**—The powerful water-wheel on this mine is now being painted preparatory to starting work. The buildings also have been repaired, and put into ship-shape order. When the mine was worked by the former proprietors, who consisted of a few tradesmen and farmers, it was returning 40 tons of lead monthly from mere scratchings, and had they not quarrelled amongst themselves, which culminated in their closing the mine, this property would, no doubt, be as rich as its neighbours—the Lisburne Mine, which has paid 187. 10s. in dividends on every 18. 15s. invested, and East Darren 235. on every 32. invested, although neither of these mines have produced anything like the same quantity of lead at the same stage of development as Bryn Glas, which upon the expenditure of a few thousands pounds more will be in a position to market at a cost of only 200/-, the deepest workings being only 23 fathoms from surface, where very rich courses of ore are left standing.

**WHEAL PEEVOR.**—This mine continues to look well, and with the improved price of tin increased profits will, no doubt, be shown at the next account. At the last meeting a dividend of 10s. per share, or 150/-, was made, and about 700/- was carried forward.

**WEST PEEVOR** is on the same productive lodes as Wheal Peevor, and is under the same management. The prospects of this property are of an exceptionally high order.

**EAST BASSET.**—It is rumoured this mine is about being reworked, with a view to cutting the great flat lode, now being worked in Wheal Uny at the 172 fm. level. As the Wheal Uny shaft is about 300 fms. north from East Basset shaft the length on the course of the lode would be about 450 fms. more, or a total depth of 622 fms. from surface. By the aid of boring machinery and renewed vigour of management it is expected anticipations will be realised. The erection of the most efficient machinery instead of the worthless engines working some time ago will materially contribute to this result.

**COMBMARTIN.**—Some very rich ore is being raised from the bottom of the winze sinking below the adit level. Three samples of the ore have been assayed, and the result is as follows:—No. 1, 70 per cent. for lead and 763 ozs. of silver to the ton of ore; No. 2, 67 per cent. for lead and 161 ozs. of silver to the ton of ore; No. 3, 15½ per cent. for copper and 530 ozs. of silver to the ton of ore. The last-named is Fahlerz ore, of which large quantities were raised during the former working, when some of the ore were produced upwards of 1200 ozs. of silver to the ton. The lode in the winze shows every indication of leading to a considerable deposit of this rich ore.

**SANTA BARBARA (Gold).**—For the six months ending June last the profits amounted to 3986. This will enable the directors to pay an interim dividend of 1s. 6d. per share for the half-year, equivalent to 30 per cent. per annum.

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### The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, AUG. 22, 1879.

IRON.	£ s. d.	£ s. d.	TIN.	£ s. d.	£ s. d.
Pig, sm., f.o.b., Clyde.	2 3 3	—	English, ingot, f.o.b.,	69 10 0	70 6 0
Scotch, all No. 1	2 3 6	3 5 0	" bars	70 10 0	71 0 0
Bars, Welsh, f.o.b., Wales	4 12 6	—	" refined	71 0 0	—
Plates, ship., in London	5 2 6	5 5 0	Australian	68 0 0	—
" Stafford	5 5 0	7 0 0	Banca	(nom.)	69 0 0
" in Tyne or Tees	5 5 0	5 10 0	Straits	68 0 0	—
Wales, Welsh, London	8 0 0	—	COPPER,	59 0 0	—
Bars, Welsh, at works	10 0 0	—	Tough cake and ingot	59 0 0	—
Sheets, Staff., in London	7 5 0	7 15 0	Best selected	59 10 0	—
Plates, ship., in London	5 12 6	—	Sheets and sheathing	64 10 0	—
Hoops, Staff.	6 10 0	7 2 6	Flat Bottoms	67 10 0	—
Nail rods, Staff. in Lou.	5 15 0	6 5 0	Walloar	62 0 0	62 10 0
STEEL.	—	—	Burra, or P.C.O.	62 0 0	62 10 0
English, pig, common	18 0 0	19 0 0	Other brands	60 0 0	—
" cast	20 0	0 40 0	Chill bars, g.o.b.	53 10 0	54 0 0
Swedish, keg.,	18 0 0	—	PHOSPHOR BRONZE,	—	—
" frag. ham.	15 0 0	—	Bearing metal	£105 0 0	—
LEAD.	—	—	Other alloys	£110 0 0	125 0 0
English, pig, common	14 5 0	—	BRASS,	63 4 d.	—
" L.B.	14 7 6	—	Wire	73 4 d.	—
" W.E.	14 (nom.)	—	Tubes	73 4	73 4
" sheet and bar.	15 5 0	—	Sheets	8	8 4
" pipe	13 15 0	—	Yel. met. sheath. & sheets	53 4	54 0
" red	16 10 0	—	Nails composition	—	—
" white	25 10 0	—	TIN-PLATES.	per box.	—
" pent shot	18 5 0	—	Charcoal, 1st quality	1 2 0	(nom.)
Spanish	14 0 0	—	2nd quality	1 0 0	—
NICKEL.	—	—	Coke, 1st quality	0 18 0	—
Metal, per cwt.	18 0 0	20 0 0	2nd quality	0 15 6	0 16 0
Orta, 10 per cent. per ton.	24 0 0	25 0 0	Black	—	—
QUICKSILVER.	—	—	Canada, Staff. or Gla.	11 0 0	12 0 0
Flasks of 75 lbs., ware.	6 5 0	—	at Liverpool	—	—
SPELTER.	—	—	Black Tappers, 450 of	10 0 0	—
Silesian	18 0 0	18 5 0	14 x 10	30 0 0	—
English, Swans.	18 10 0	—	At the works, 1s. to 1s. 6d. per box for ordinary; 1s. per ton less for Canada; 1x 5s. per box more than 10/- quoted above, and add 6s. for each x. Terne-plates 2s. per box below tin-plates of similar brands.	—	—

**REMARKS.**—The metal market is without material change, but there has been less firmness in some metals, and prices have slightly given way, excepting those for spelter and zinc, which have continued to improve. The reaction is again due to larger supplies than were expected, and which are much beyond the requirements of the market. Producers are becoming the destroyers of their own markets by so repeatedly overloading them with superabundant supplies, and unless they soon very considerably curtail their production lower prices are inevitable. It is unreasonable to expect that trade will suddenly undergo any vast improvement. There are already, perhaps, some signs of an awakening from the lethargic state in which it has so long remained, but it is premature to assume that a permanent recovery is about to take place. Here and there the demand has slightly revived, and prices have hardened, but there is no substance yet awhile in the change, and although the last month may have been a little better than its predecessor, that in itself is no justification for believing in the actual termination of the depression. It would, indeed, be a hasty and dangerous conclusion to arrive at in the present weak and feeble state of the markets, and one that would be greatly calculated to mislead. Commerce is still in a very unsettled and unsatisfactory condition, and the markets will require very gentle handling before they can be advanced with any degree of safety or advantage. True, political affairs are not causing much trouble or anxiety, but the agricultural interests must be suffering immensely from the unfavourable state of the weather, and this cannot fail to exercise a depressing influence over the whole country.

There is in fact no powerful incentive to transact much business, and after the usual autumn demand has been satisfied it is very questionable whether sellers will be able to maintain even present prices. Notwithstanding the slightly better tone that has prevailed, and the efforts that have been made to persuade buyers that the markets are decidedly on the upward turn, yet buyers are slow to respond, or to place faith in their stability. The harvest prospects are certainly not good, for the lateness of the season, the continuance of bad weather, the floods, and the beaten down crops are matters of the most serious importance to the farmers, and far from reassuring to the community at large, and unless the weather at once clears up and is fine and warm for the next six weeks, the harvest we fear will be poor and deficient. High prices of food, low wages, and the excessive taxation, must necessarily press hard upon the people, and add to the depression in trade. Money will be wanted to pay for corn, and by the month of October some stringency may be experienced in the money market. Holders, therefore, should be well prepared against a fall, for dear money leads to depreciation of prices, and a great clearance of old stock will have to be effected before the markets are thoroughly relieved, and a sounder basis provided upon which to base future operations.

**COPPER.**—Another disappointment has been experienced by the holders of copper in the announcement of heavy charters from, Chili for the first half of August, there being no less than 3200 tons which would have been ample for the whole month, and, therefore, is just about double the quantity to what was wanted. Holders have been blindly building up their hopes upon light charters, but they are now beginning to get utterly disgusted with such overwhelming supplies. It was at one time thought that the reduced price of copper would exercise some influence in checking supplies; and the accounts published from various places seemed to hold out such a prospect, but quite time has now elapsed to prove its inaccuracy, for the result is that, instead of any falling off taking place, there is an actual increase. We need only refer to the published statistics in confirmation of this assertion. Nevertheless, it is hard to convince holders that their best policy is to realise, and not to be carried away by any speculative views. Prices lately ought to have been reduced and not advanced, as there was not sufficient justification for a rise, and holders would best consult their own interests by disengaging producers to pour upon the market so vast an amount of copper more than is required. The end of it all can be plainly seen, prices must eventually fall, and the last out will suffer the most; a sacrifice must be made, and holders should cut their loss at once, and not wait to see what others are going to do. Sell while a chance remains, or there may come a time when sales are difficult, perhaps almost impossible, without adding considerably to the sacrifice which must even under present circumstances be submitted to.

If any stringency in monetary affairs or forced realisations had to be made by reason of deficient margins on loans, it would undoubtedly be attended with calamitous consequences. The evil exists in the frightful amount of stock which has been accumulating year after year in Europe, to such an extent that its proportions now far exceed anything approaching that of any previous period, and if the least hitch should occur in the management or manipulation of this gigantic pile it would fall with crushing force upon

the Royal Mail Company's steamer, alluded to in our last, was fixed at 50*1/4*d. per oz., at which quotation the market has been steady during the week. There have been no arrivals. The shipments, per P. and O. steamer *Deccan*, are 98,900*t*. to Penang, and 34,900*t*. to Shanghai.

The MINING SHARE MARKET has been very active this week for tin, and firmer for lead and copper mines, but not so much actual business has been transacted in the latter as there has been in the former.

TIN.—The standard for ore has further advanced 3*1/2* per ton, making a rise of 5*1/2* altogether, and this has given a great impetus to the market. *Carn Brea* shares have advanced to 27, 29, being a rise of 7*1/2* per share, or 700*t*. for the mine. *Dolcoath* shares have reached 27 to 29; *East Lovell*, 1 to 1*1/2*; *East Pool*, 12*1/2* to 13; *South Condurrow*, 11*1/2* to 13*1/2*; *Tincroft*, 9*1/2* to 10; *West Bassett*, 4*1/2* to 4*1/2*. At the *Retallack* quarterly meeting, held on Wednesday, the accounts showed a loss on the quarter of 44*1/4*l., and a debit balance of 33*9/10*l. A call of 2*1/2* 10s. per share was made. The tin and copper sold realised 422*28*. The *South Croft* accounts show a loss of 483*1/2*l. for four months' working, and a debit balance of 455*6*l. *South Frances* have not advanced like other tin shares, and remain at 6*1/2* to 7*1/2* ex div. *West Frances*, 4*1/2* to 5*1/2*. *Wheal Bassett*, 25*1/2* to 30*1/2*, calls paid. At the meeting held in Cornwall the accounts showed a balance against the mine of 4697*1/2*l., and a call of 7*1/2* per share was made. *Wheal Grenville*, 4*1/2* to 4*1/2*; *Wheal Peveril*, 9*1/2* to 10; *West Peveril*, 2*1/2* to 3.

COPPER.—At the Cornish ticketing, on Thursday, the standard for ore advanced 15*1/2* per ton, and the average price of the ore sold was 2*1/2*, 17*1/2* per ton. *Devon Great Consols*, 1*1/2* to 1*1/2*; the ore here (805 tons) realised 1507*1/2* 16*1/2* per ton, or less than 2*1/2* per ton. *South Caradon*, 50 to 55; the sale (440 tons) brought 1903*1/2* 4*1/2* per ton. *Marke 10s.* to 12*1/2* 6*1/2*; at the sale here 277 tons brought 767*1/2* 2*1/2* 6*1/2*. *Wheal Crebros* have been largely dealt in up to 3*1/2* per share, and leave off 2*1/2* to 3*1/2*; the ore here (163 tons) realised 519*1/2* 11*1/2*, or 3*1/2* 3*1/2* 6*1/2* per ton. The report states that the end driving west from the bottom of the 108 cross-cut south has been cut through 8*1/2* feet, and worth 3*1/2* per fathom. The new lode in the 108 cross-cut south has been cut through 8*1/2* feet, and worth 3*1/2* per fathom. *West Tolgus* shares have advanced to 20, 22*1/2*; a good course of ore has been met with in a cross-cut in the 13*1/2*, and worth, we understand, 4 tons of copper ore per fathom. *New Cook's Kitchen*, 1*1/2* to 2*1/2*; *West Seton*, 18 to 20; *Mellanear*, 3 to 3*1/2*; *Morfa Du*, 16*1/2* to 18*1/2*; *Parys*, 10*1/2* to 12*1/2*. *Wheal Grenville*, 4*1/2* to 4*1/2*; *Wheal Peveril*, 9*1/2* to 10; *West Peveril*, 2*1/2* to 3*1/2*.

LEAD Mines have been firmer, but there has not been very much business transacted, and prices, especially for speculative shares, are mostly nominal. *Van*, 15 to 16; the sale of lead ore this month—300 tons—realised 10*1/2* 2*1/2* per ton—303*7* 10*1/2*—being 15*1/2* per ton more than the last sale. *Blende*—150 tons—brought 2*1/2* 18*1/2*—43*1/2*—or an advance of 1*1/2* per ton on last sale. The directors have issued a circular to the shareholders, informing them that, having regard to the long and continued depression in trade, and the great fall in the price of lead ore, they have determined to limit the returns of the mine to a point sufficient to meet the working cost, and have consequently discharged a large number of workmen. The next sampling will be only 200 tons of lead ore for the month, and this stoppage of the dividends has had its effects upon the shares, which are weaker. *Roman Gravels*, 7*1/2* to 8*1/2*; no change in the report here. *Tankerville*, 3 to 3*1/2*.

*Pately Bridge*, 9*1/2* to 11*1/2*. *West Pately*, 2*1/2* to 3*1/2*; the agent writes that the *Craven* cross lode, in the 5*1/2* north-west, has further improved, and worth more than 6 tons of lead ore per fathom. *Herdsfoot*, 2 to 2*1/2*; the 20*1/2*, or bottom level north, is worth 12*1/2* cwt. of silver-lead ore per fathom; same level south 15 cwt. per fathom; rise above the 20*1/2* to new shaft 18 cwt., and 1*1/2* fms. more to communicate to the 19*1/2*, and complete the shaft about next week. *Combomartin*, 7*1/2* 6*1/2* to 10*1/2*; the prospects of the mine are improving, and the ore, should any quantity be found, is remarkably rich for silver. *Clementina*, 1 to 1*1/2*; *Aberllyn*, 10 to 11; *Denbighshire*, 1*1/2* to 2; *East Van*, 1*1/2* to 1*1/2*; *Glenroy*, 7*1/2* 6*1/2* to 10*1/2*; *Gorsedd and Merllyn*, 1*1/2* to 1*1/2*; *Gwernymynydd*, 4 to 4*1/2*; *Holway*, 4*1/2* to 5*1/2*; *Great Laxey*, 15 to 17*1/2*. *Leadhills* in demand, at 1*1/2* to 2*1/2*. *Minera*, 9 to 10*1/2*; *Tyn-y-fron*, 1*1/2*; *West Holway*, 1*1/2* to 2*1/2*; *Caron*, 2 to 2*1/2*; *Frongoch*, 1*1/2* to 2*1/2*; *Grogwinion*, 2*1/2* to 3*1/2*; *Hartington*, 1*1/2* to 2*1/2*; *Crosswood*, 1*1/2* to 2*1/2*; *Mawston*, 1*1/2* to 2*1/2*; *Red Rock*, 2 to 2*1/2*; *Wye Valley*, 1*1/2* to 2*1/2*; *West Wye Valley*, 1*1/2* to 2*1/2*.

FOREIGN MINES.—*Canada Gold*, 2 to 2*1/2*; *Cape Copper*, 2*1/2* to 2*1/2*; *Colorado*, 1*1/2* to 1*1/2*; *Don Pedro*, 7*1/2* to 10*1/2*; *Eberhardt and Aurora*, 1*1/2* to 2*1/2*; *Frontino* and *Bolivia*, 1*1/2* to 2*1/2*; *Santa Barbara*, 30*1/2* to 35*1/2*; the advices for June show a profit of 540*1/2* 11*1/2* 2*1/2*. The gold return (328 oits.) is estimated at 1396*1/2* 11*1/2*, against costs 855*1/2* 19*1/2* 10*1/2*. *New Querbrada*, 1*1/2* to 2*1/2*; *Panucillo*, 1*1/2* to 2*1/2*; *Port Phillip*, 8*1/2* to 10*1/2*; *Richmond*, 7 to 7*1/2*; *St. John del Rey*, 260 to 270; *Ruby*, 1*1/2* to 2*1/2*.

The Market for Mine Shares on the Stock Exchange has fully maintained the improvement noticed last week. The tin miners are receiving a much better price for their ores, the rise in the standards having been no less than 5*1/2* per ton. At the Cornish copper ticketing, on Thursday, the standard went up 15*1/2*., and the improvement in the lead market is satisfactorily affecting the price of lead ores, so that the miners are now receiving an amount which will render profitable operations much more easy than heretofore.

The *Huelva* Mining Company (*Société des Mines de Huelva*) has been again before the Courts at Paris; and with regard to the litigation the *Moniteur de l'Epargne* says:—For 20 years they have brought actions against this company and lost them all, but they only seek a new pretext to recommence. This is again an action which can be recommended in order to be lost afresh, for by judgment of Aug. 5 the Civil Tribunal of the Seine has decided in favour of the *Huelva* Company. It will be remembered that at the time of the amalgamation of this company with the *Tharsis* Company, which farmed the mines, certain persons, or their representatives, tried to influence the shareholders of the *Tharsis* Company by making a great noise about four new actions which they had commenced against the *Huelva* Company. One of these actions especially was for the rescinding of the contract connected with the sale of the mines, upon the pretext that the company had not fulfilled its engagement towards the vendors. By judgment of June 24, 1879, the Civil Tribunal of the Seine rejected simultaneously the four claims, and condemned the claimants to pay the costs. Whilst these actions were still pending before the Tribunal these same persons introduced another claim for annulling both the contract of amalgamation and the proceedings of the general meeting of shareholders at which it was approved. This new pretension was based, like all which preceded it, on the ground that the contract of amalgamation and the resolution which sanctioned it interfered with the rights of the original vendors. By judgment of Aug. 5, 1879, the Civil Tribunal of the Seine have just ignored once more these pretensions constantly revived, and thus confirmed more distinctly the rights of the *Huelva* Company.

Honduras bondholders may congratulate themselves that they are not the only persons whose credulity has been turned to account by the representative of that needy little state. The experience which English capitalists have had of the untruthfulness and want of honour in monetary matters of Spaniards both of the old world and of the new should have sufficed to put them on their guard with respect to Honduras, but as they failed to utilize the experience gained it may be some gratification to them to know that even the Spaniards themselves are not astute enough to protect themselves against the "cuteness," as Americans would designate it, of those who claim the honour, if any, of Spanish extraction. The *Diario Espanol* of Madrid publishes a paragraph, which has been, it is said, reprinted and commented upon by some 14 other newspapers in that city, to the effect that "in one of the courts of this capital a criminal action has been brought against a foreign personage residing in Spain, opulent, and of some celebrity. It appears that this person has published a book of some literary merit as his own production, when in reality it was written by a modest Spanish author. The Press and authors in general are very anxious that the facts may be published and sifted, so that if guilt exists the guilty person may be severely punished." The personage above alluded to as defendant is declared to be the ex-Minister of Honduras, Don Carlos Gutierrez, of partial memory to the unfortunate holders of bonds of that wretched country. At present he is residing in a fine mansion in San Sebastian, enjoying the proceeds of the Honduras Loans by giving dinner parties and making himself prominent, selecting his guests from amongst the various visitors to San Sebastian, the bulk of whom are unknown to him, and certainly are unaware of the *lustra* (?) which adorns their host. It is asserted that after this personage gave the order to a Spanish author to write an historical work referring to "Bartolomé de las Casas." He has issued the book as his own production, with the object of passing himself off as a literary man in Spain and in Central America. (The poor ruined bondholders give him credit for a taste towards something of a very different kind to literature.) It is extremely amusing that this book—"Las Casas"—to which the ex-Minister has appended his name as author, abounds in Latin quotations, which language the pretended author seems to be utterly unacquainted with; and that circumstance, coupled with the fact that he could not really prepare his own answers to the charges made against him in connection with the Honduras Bonds, &c. It will be very curious to see the explanation of this affair. The law in Spain upon literary property is very strict, but unfortunately the Courts of Justice are slow and troublesome, as may be supposed from the fact that this action was commenced in May, and up to the present time the defendant has not been examined by the Judge of the Court."

*Canada Gold*, 2 to 2*1/2*; it appears that Mr. Gordon (the late ma-

nager of the *St. John del Rey* Mines) sailed for Canada yesterday. He goes out to inspect the mines of the company, and to organise the working arrangements. Accounts from the mines to date are that returns of gold are already being made. This company is in 15,000 shares, of 1*1/2* each.

*Santa Barbara*, 1*1/2* to 2*1/2*; the latest advices to hand give the results of the operations for June. The ley of the ore worked was better by more than 3*1/2* oits. per ton, the ley at present being between 3*1/2* and 3*1/2* oits. per ton. During June 3286 oits. of gold, of the value of 1395*1/2* 11*1/2*, was obtained from 914 tons of mineral stamped. The estimated working cost was 855*1/2* 19*1/2* 10*1/2*, leaving a profit for the month of 540*1/2* 10*1/2*. The amended gold tax law came into force on July 1. During the month the ore raised was nearly 30*1/2* tons per borer, and nearly 3*1/2* ton per hole bored.

*Richmond*, 7 to 7*1/2*, ex div.; the usual telegram from the mines at *Eureka* Nevada states that the week's run was \$35,000 from 740 tons of ore. During the week the refinery produced doré bars to the value of \$33,000. They have tried No. 2 furnace with coke alone, but the production was reduced one-half, and they are now using mixed fuel. The manager (July 30) reports that there is no change of importance to mention from any of the different parts of the mine. The 200 crosscut end is in very favourable ground. The present end of the 600, west and south of south fissure drift, is looking well for good ore. The chambers are without much alteration since previous report; they are turning out the usual quantity of fair grade ore. The machinery both in mine and smelting works is in good working order. Ruby, 1*1/2* to 2*1/2*; the bonds of the company are, it is stated, being absorbed, and this is not considered surprising, as they carry 10 per cent. interest, being a first charge on the assets of the company, besides receiving a bonus of an equal amount of share stock at par. The accounts from the mines are of a highly satisfactory nature.

In *Hydraulic* or *Gold Washing* Companies' shares there has again been an almost total absence of business, although the *Birdseye Creek* report issued for the meeting on Thursday next is so decidedly encouraging that a good business in the shares was fairly to be anticipated. The report evidences a return to a more prosperous condition. The accounts show that during the year ending April 30 the California profit was 211*3/4* 7*1/2* 11*1/2*, and that after paying off 10*1/2* of debentures, London expenses (exec. directors, who have had nothing for the past three years), debenture interest, &c., still remained on June 30 a cash balance of 33*1/2* 8*1/2* 1d. Since April the California profits advised are \$11,750, or 23*5/8*%, on account of the present financial year. The total in debtors of the company in California has been cleared off; and the directors' trust that by the end of the current water season the 20*1/2* on debenture account will represent the whole of the company's liabilities. Twenty debentures of 5*1/2* each have been drawn for repayment on Oct. 31. The company's superintendent's report, though perhaps somewhat disappointing as to the future productivity of the mine, holds out hopeful anticipations as to their future productiveness. The "Debris" suit will, it is expected, come up for hearing before the Supreme Court of California in November or December. The directors believe that the company will not be prejudiced by the New Constitution in that State.

The *Colombian Hydraulic Mining Company* is again referred to in an admirable letter from Mr. Gray, published in another column. There has certainly been no intention to make the position of the concern a personal question between him and the present board, nor, indeed, a personal question at all. Mr. Gray's observations and suggestions are at all times practical, straightforward, and to the point, and certainly not as they were designated at the meeting "ridiculous." Mr. Gray is not aware of any "malpractices" in connection with the acquisition and development of the three defunct companies referred to, and this was no doubt proved to the satisfaction of the Judge, since Mr. Gray infers that the question was raised before the Court. Mr. Gray shows clearly that there has been no unnecessary delay in acting on his part; he has urged a competent examination and report on the whole property for more than two years, but there were no funds in hand until now. It is unusual for the chairman of a meeting to tell shareholders that their property is in a "God-forsaken country," or that their suggestions are "ridiculous," but it may be to the advantage of the shareholders in this case, as it may lead those who have to provide the funds to consider their position from a more business-like point of view. The latter portion of Mr. Gray's letter can be answered only by the Chairman or the board, and it is regrettable that the want of courtesy displayed toward him should justify him in writing—"When the suggestion is made to embrace what is probably our last opportunity for doing what undoubtedly should have been done six years ago I cannot consider it wise or prudent on the part of the board to deride the proposal. I repeat that it is not Mr. Walton's personal honesty, but his official capability, which is in question. The board may still have 'perfect confidence' therein, but I venture to say that, after the disastrous experience of the past six years, a great many of the shareholders have not. Our properties may be situated in a 'God-forsaken country,' but there are insuperable physical difficulties in the way of their removal, I think, unless it is 'ridiculous' to spend any more money at all upon them, that it would be wise to send a competent person to ascertain and report to us whether it is or can be expended so as to secure a profitable return."

The shares in *Lead Mines* continue to receive more attention from the market than those of any other class, owing to the still improving prospects of the lead market. It has of late been frequently, and no doubt correctly, stated that the increased production of lead in the United States of America had had a depressing effect upon the European trade, but it seems probable that this cause of disturbance will no longer exist, for the consumption of lead within the United States themselves has so much increased, and is so rapidly increasing that, notwithstanding the vast increase of production in the silver-lead districts the whole of the lead, and especially of soft lead (which is the quality that chiefly enters into competition with the English in foreign markets) produced will be required for the American home market, and the growing consumption there will with difficulty be kept pace with by the American soft lead mines. Under these circumstances those who are supposed to be competent to form an opinion as to the probable movement of the market conclude that a permanent rise in the price of lead in England is inevitable, and that the lead mining industries both in this country and in America have better prospects before them than any other branch of metalliferous mining. Some interesting information with regard to the lead trade prospects of the United States, which strongly confirms these opinions, are published in another column.

*Frongoch*, 1*1/2* to 2*1/2*; good accounts continue to be received. Large quantities of ore are getting ready for sale. *Grogwinion*, 2*1/2* to 3*1/2*; the operations continue to go on with their accustomed regularity and success. *Caron*, 2 to 2*1/2*; the deep level is still looking well, and likely to improve. *Wye Valley*, 1*1/2* to 2*1/2*. *North Hendre*, 5 to 5*1/2*; since the sale of 110 tons of lead (worth 400,000*t*.) were raised in the lower flat, and the indications in the upper flat are, it is said, of greater promise than under similar circumstances prior to the above great discovery. On Saturday and Sunday last 6 inches of rain fell in the district, but fortunately the mines have not been injured in the least, nor have the operations been impeded.

*Leadhills* shares have been in good demand all the week, and close at 1*1/2* to 2*1/2*, with an upward tendency. The mines have, it is reported, considerably improved, and in several parts produce 3*1/2*, 4*1/2*, and up to 10 tons of lead per fathom. The mines were never more promising than now, and monthly returns are likely to be considerably increased. *Tankerville*, 3*1/2* to 4*1/2*; and in demand. The improvement in the lead market has set in; the large quantity of dead work necessary has been done during a period of depression, and consequently upon terms favourable to the company, and they will now receive a fair price for the mineral sold.

*Gwernymynydd*, 4 to 4*1/2*; the driving up towards the flat in the *Fron Fawng* sett is now within about 8 yards from the perpendicular, where the 40,000 tons of lead (worth 400,000*t*.) were raised in the lower flat, and the indications in the upper flat are, it is said, of greater promise than under similar circumstances prior to the above great discovery. On Saturday and Sunday last 6 inches of rain fell in the district, but fortunately the mines have not been injured in the least, nor have the operations been impeded.

## Notices to Correspondents.

"Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

**ROTARY ENGINES.**—"H. J." (Manchester): From the description given the engine alluded to appears to be the Macfarland (or Macfarlane) rotary engine, which was fully described in the *Mining Journal* some years ago. It was shown in use at a factory in the City-road, and some arrangements were made for developing the invention by a public company; but nothing is known to have been done towards getting the engine regularly used in a workshop. A reference to the books at the Patent Office Library will enable "H. J." to ascertain whether the patent is still in force.

**SHARE DEALING.**—I should be glad to learn what is the length of time usually considered reasonable for the delivery of the transfer of shares purchased, calculating from the time the money reaches the dealer's hands; and also how long ought to elapse between the dealer's note that shares have been sold and the receipt of the money. I should consider three days an ample margin in each case yet I find that in practice it often takes as many weeks to get the transfer in the first case, and more than as many months to get the money in the second.—**SPECULATOR: Dundee.**

**THABIS COPPER COMPANY.**—"Scotia" (Edinburgh): There have been some further proceedings in the French Courts by the representatives of Haselden and Gosse against the Huelva Company, but the decision was again in favour of the company. Men have the privilege of bringing actions in the French as in the English Courts, and thus putting an individual or a company to some annoyance, but constant condemnation in costs is a wholesome counter-irritant, although French law costs not amounting to one-tenth the English scale, French actions are commenced much more inconsiderately.

**TURBINES.**—Can any correspondent give me any details as to the relative power of turbines and water-wheels with a given fall of water? Assume the head of a streamlet is 100 ft. above the property on which the power is to be used, and that there is 1000 gallons of water per minute, could this be best utilised with a water-wheel or a turbine, what would be the first cost of each, and how many horse-power could be obtained? Secondly, if two wheels or two turbines were used—one beyond the other—could twice the power, or anything near it, be obtained? Is there any book which will furnish the information?—**ADVENTURER.**

**Received.**—"W. T. R." (Tucson, A. T.): Next week—"T. W."—"S. N."—"Share holder" (Wheat Basset)—"Engineer" (Glasgow)—"A. F." (Goginan)—"C. B." (St. Davy)—"W. W. B." (Whitehaven)—"H. L." (Clewer)—"Iron": The office of the Manchester Geological Society is at 36, George street, Manchester, where the *Transactions* of the Society can be procured. T. Bush (Parry's Mountain)—"Shareholder" (Tunkerville)—"G. H. D."—"Reform" (the ton of 21 cwt.): Next week.

## THE MINING JOURNAL, Railway and Commercial Gazette.

LONDON, AUGUST 23, 1879.

## OIL SHALES.

As bearing a close relationship to coal of late years a new industry has sprung into importance—that is, the production of oil from shale, the demand for which appears to have increased immensely, Scotland being the seat of manufacture. Paraffin is the principal article produced from the shale, as also naphtha, solid paraffin, and ammonia. Mr. JAMES YOUNG may be said to be the founder of the trade, who, so far back as 1848, had a small petroleum spring which was met with in a colliery at Alfreton, in Derbyshire, and when that became exhausted he endeavoured to obtain the same oils by distilling coal. After many trials he was fortunate in meeting with what may now be termed the famous Boghead Cannel, so well known for its richness in oil. But some shale, it may be said, bears a strong affinity to coal, and this led to a celebrated trial at Edinburgh, in 1853, in which the most eminent chemists, mineralogists, geologists, and others were called upon to decide the very important question as to what constituted coal and what constituted shale. The issue involved important interests, and large sums of money—a lease of a coal field having been granted to a gentleman, who found that it contained a large quantity of excellent and valuable oil, and, instead of selling it in its raw state, he extracted from it the oil, and made vast profits by so doing. The lessor, finding that he had made a rather bad bargain from his ignorance of the material he had given on lease, came to the conclusion that it was not coal from which the oil was extracted, but something like shale, so he brought an action to prevent the lessor from working the oily substance, and as gentlemen on his behalf he produced several eminent scientific witnesses, who declared that the material was not coal. On the other side, however, witnesses equally eminent were called, who declared that the article from which the oil was drawn was coal, and nothing else. The trial occupied five days, when the Lord JUSTICE-GENERAL, after a lucid statement, ignored all the evidence that had been given, and made the remark that—"To find a scientific definition of coal after what has come to light within the last five days is out of the question."

Some coal, such as is known as the "curly Cannel," peculiar to the Mold district, in North Wales, gives a large percentage of oil, and at one time was extensively distilled. Some other shales are also rich in oil, and at Barnstaple, far away from any coal field, a bed of shale highly impregnated with oil was found while digging some foundations. It was found traversing the upper Devonian shale. But it is met with most extensively in connection with the coal measures, and now the coal trade is in such a depressed state, and profits out of the question, there is no reason why shale so plentiful should not be worked and made to pay. At the East Ardsley Colliery, near Leeds, we some time since saw the shale raised there being distilled, and in all probability it is at the present time. The oil is in great demand, and the price is such as to leave a good profit, if we are to judge by the dividends paid by one company and the vast sums made by a few individuals, who have had something like a monopoly of the manufacture since it was first commenced. The value of solid paraffin is considerable, and with respect to it LIEBIG, the great chemist, said if anyone succeeded in producing it from coal it would be one of the greatest discoveries of the age. This has been accomplished, and from shale we obtain a white, dry, odourless substance, portable, and capable of being burned in a lamp. Paraffin has also been obtained from peat, and at the time of the Irish famine schemes were proposed by which the peat bogs of Ireland were to become a second California. An experiment was made on 100 tons of bog, and it was stated that at a cost of less than 20/- products valued at 90/- were obtained. But the scheme came to nothing. Many years ago, also, some thousands of pounds were laid out in works on Dartmoor, and naphtha, ammonia, grease, and other matters were obtained from the peat. The probability is that the process of distillation was the cause of the failure as much as anything. With our present knowledge, however, of distilling and obtaining oil, the peat bogs may yet be made sources of both profit and employment in extracting from them their oleaginous properties.

Scotland, as we have before stated, has become the centre of the trade through the energy of a few individuals who were well acquainted with the valuable nature of the Boghead Cannel. Mr. YOUNG, after leaving Derbyshire, in conjunction with Mr. MELDRUM and Mr. BINNEY, the geologist, erected works at Bathgate in the centre of the Torbene Hill coal field, and year after year increase their production of oil. Amongst the various works in Scotland nearly 800,000 tons of shale are distilled annually, producing nearly 30,000,000 gallons of crude oil, from which about 12,000,000 gallons of refined oil are obtained, in addition to large quantities of naphtha, solid paraffin, ammonia, and other chemical products. Yet 25 years ago scarcely a dozen persons, we are told on high authority, had seen the article known as paraffin, but it is now produced by the ton to be manufactured into candles and other articles, either perfectly white or delicately tinted by the dyes from coal tar. Large, however, as is the home manufacture, it is considerably below the consumption, so that there is every inducement for mineowners becoming manufacturers, as they would be able to find markets for all they could produce. The oil shales, we may say, realise a higher price than the best coal, the last return giving the average value at 8/- per ton. As to the progress made, we find the returns for 1874 give the output for Scotland at 312,000 tons, Flintshire 270 tons, and

North Staffordshire	2001 tons.
But for 1878 the returns give the quantity at 808,704 tons, obtained as follows:—	
Cheshire, mixed with Cannel	Tons 87,000
Flintshire	9,741
Staffordshire, North, mixed with Cannel	34,800
Yorkshire	11,224
Ayrshire	17,009
Edinburgh	313,157
Lanarkshire	33,238
Linlithgow	189,271
Renfrew	92,214
Stirling, part of	1,050
Total	808,704

Considering the extent of our coal fields, the quantity of shale given above, large as it is, is very far below what could be produced without any addition to the number of persons employed at our mines, while it is evident that the manufacture of oil is about the only thing at all connected with the coal trade that is really profitable.

## OUR COAL ABROAD.

Our coal exports appear to be still extending. They showed some little dulness in July; but in the seven months ending with July 31 this year they amounted to 9,052,561 tons, as compared with 8,946,814 tons in the corresponding period of 1878, and 8,931,190 in the corresponding period of 1877. Our exports have thus been moving on this year at the rate of 15,552,960 tons per annum, while for the whole of 1869 the corresponding exports did not exceed 10,744,945 tons. The exports thus bid fair to exhibit an increase of at least 40 per cent., comparing 1879 with 1869. But the movement of coal from our shores this year has been really in excess of 15,552,960 tons, as account ought also to be taken of the coal shipped for the use of steamers engaged in the foreign trade. These latter shipments have been moving on this year at the rate of 4,164,660 tons per annum—so that it appears probable that the aggregate movement of coal from our shores in one form or other in 1879 will not be far short of 20,000,000 tons, representing a money value of about 8,000,000. Truly our export coal trade must be acknowledged to have attained a great importance.

It is noticeable that we have been sending a smaller quantity of our coal this year to the North of Europe—that is, to Russia, Sweden and Norway, and Denmark. The shipments made to those countries been as follows for the first seven months of the last three years:—

Direction of Export.	1877.	1878.	1879.
Russia	Tons 705,593 ...	807,752 ...	662,513
Sweden and Norway	641,298 ...	604,853 ...	511,844
Denmark	396,811 ...	374,444 ...	344,602

Total ..... Tons 1,743,707 ... 1,787,049 ... 1,518,959

On the other hand, notwithstanding the vigorous efforts which the Germans appear to be making to render themselves independent of supplies of foreign coal, and even to pour their coal into neighbouring markets, we have maintained our deliveries of coal to Germany pretty well this year. Thus, these deliveries amounted to July 31 to 1,035,370 tons, as compared with 943,424 tons in the corresponding period of 1878, and 1,120,023 tons in the corresponding period of 1877. The most remarkable feature in our export coal trade is, however, the increase which appears to be still proceeding in the exports of our coal to France. In the first seven months of this year the French took from us no less than 1,833,563 tons of coal, as compared with 1,804,103 tons in the corresponding period of 1878, and 1,729,339 tons in the corresponding period of 1867. Our coal has been gaining ground very sensibly this year in Spain and Italy; but it has not made much progress in other directions.

The price of our coal has been steadily falling during the last 10 years, as most, if not all of our readers are already aware. This decension is reflected in the fact that the 8,931,190 tons of coal, representing the direct exports of the first seven months of 1878, were valued at 4,572,829/-, while the 8,946,814 tons forming the direct exports of the first seven months of 1878 were valued at 4,283,874/-, and the 9,052,561 tons representing the direct exports of the first seven months of 1879 at only 4,002,516. While prices thus stood at about 10s. per ton in the first seven months of 1877, they were little more than 8s. per ton in the first seven months of 1879. The coal "tribute" paid us by the French this year, in spite of the low prices prevailing for coal, amounted to July 31 to 773,749/-, as compared with 777,860/- in the corresponding period of 1878, and 776,310/- in the corresponding period of 1877.

## THE MINERS' CONFERENCE.

The Conference convened by the Executive of the National Association of Miners, at Manchester, was brought to a close on Saturday, and the business done appears to have been far less practical and sensational than at former gatherings. Mr. MACDONALD, M.P., occupied the chair; but, as reporters were not allowed to be present on the occasion, his eloquent address in consequence has not been made public. From the preliminary proceedings it was evident that an effort was made to impress the public with the belief that the Conference was far more important than it actually was. Certain information was vouchsafed to the reporters who called upon the secretaries, and it was stated that the delegates present represented 197,000 miners. Now, according to Mr. HALLIDAY, this is simply an impossibility. On referring to the Government Inspectors' reports for 1878 we find that the total number of persons employed underground in the coal, ironstone, shale, and fire-clay mines in the United Kingdom above the age of 16 years was 338,148, yet the delegates boldly assert that they represent more than one-half of the whole of that number. We should like to know how the delegates were elected, and the actual members belonging to each of the associations; and, had we these facts, we have no hesitation in saying that it would be found that those present at the Conference did not represent 100,000 adult miners. Mr. MACDONALD, no doubt, has the returns showing the number of persons belonging to each association, and if we are wrong will perhaps set us right. In Scotland there are 48,000 miners working underground above the age of 16; yet Mr. HALLIDAY says not one-sixth of these belong to the Union. In the northern counties there are 73,000 miners above the age of 16; yet we are told that not more than 30,000 of these are connected with the association, which is the strongest in England. South Wales has 31,000 underground workers above 16 years of age; yet there is scarcely a vestige of an association there. Yorkshire has 41,000, and Derbyshire, Leicestershire, and Notts 24,000 miners; but who will say that one-half of these pay into any Union. Where then, we should like to know, does the 200,000 miners come from that we are told were represented at the Conference? This is a question we think ought to be answered by the Executive, to show that the gathering was really a *bona fide* one, and we shall be happy to supply all the figures given in the returns as to the number of persons employed underground in all our mining counties. The first and most important question brought before the Conference was that relating to migration and emigration. It is evident that there are too many miners in the country, and that the lessening of the number would be a great advantage to the remainder; but the probability is that if many went to America they would also find the mines overstocked with hands, and wages, all things considered, not much better than at home. It was suggested that 10s. per man would give a fund of 100,000/- it was not stated where the 200,000 contributors were to come from—which would be of national benefit. But, for sufficient reasons, the idea of raising such a sum was abandoned. It was, however, agreed that a National Emigration Fund should be established, of a voluntary character, and that money be raised to purchase land and to defray the expenses of members emigrating or migrating; that there be a weekly subscription, and that persons migrating or emigrating be balloted for as soon as the funds are raised. The latter is a necessary qualification, and we are afraid that a considerable time will elapse before we hear of any number of colliers emigrating, and becoming landed proprietors and farmers. The terms, however, are very moderate; for there is to be for every 3d. paid in

a fortnight one chance by ballot, and the members entitled by ballot to the assistance-money shall be entitled to a grant of 6/- to go to America, and 10/- for going to Australia or New Zealand. The amounts proposed to be given are not such as are likely to entice miners to leave their homes for the chances of a foreign land.

The question with reference to wages was afterwards discussed, as well as that relating to the restriction of the production of coal at the mines. After some discussion it was decided that under present circumstances it was not desirable to recommend the various districts to recommence an agitation for a 10 per cent. advance with respect to wages. As to the proposal for restricting the output, this was not entertained by the congress. This was certainly the best course that could be adopted, for Mr. MACDONALD knows perfectly well that restriction is simply an impossibility, and no doubt the other delegates had the same belief; however, the proposition of which so much was made was most unmercifully thrown overboard. It was proposed that for the services rendered by Mr. MACDONALD to the cause of unionism, and to the mining body in particular, he should receive a salary of 250/- yearly so long as he continued to be a member of Parliament. Seeing that Mr. BURGESS has 500/- a year, no one, we think, will begrudge the stipend to Mr. MACDONALD, which was agreed to by the Conference. Saturday was occupied in the appointment of the officers for the ensuing year, and then the Conference terminated. Of course, the Bill for giving compensation to workmen for injuries was highly approved of, and is to be introduced during the next session. Altogether, the Conference was about the quietest that has yet been held, and as the meetings are free from the intrusion of reporters of course there is a great deal said and done that is not made public, and this, in all probability, is greatly to the advantage of the delegates, who are entirely free from newspaper criticism. In so closing their doors we think the assembled wisdom of the mining community deserve every credit, for not washing any dirty linen they may have in public, or making known the follies of individual members or the squabbles amongst the many.

## ALBERT MEDALS FOR HEROISM AT ABERCARNE.

The heroic deeds of colliers in attempting to rescue their fellow-workmen after explosions or other calamities underground have frequently been referred to in the *Mining Journal*, but it is only recently that these acts of valour have received public recognition. Although no one who has been at a pit head after an explosion would even suggest that any thought of reward or praise enters the minds of the volunteer explorers when they start on their mission of humanity, it cannot be doubted that it is highly gratifying to them when they have passed through dangers which few but miners would be inclined to face at all, to find that their efforts have been appreciated, and that their names are permanently recorded on the roll of fame. The gratification felt by the recipients of the Albert Medal after the noble efforts to recover the entombed miners at Ty Newydd is well known; and Tuesday's Gazette shows that equally praiseworthy exertions at Abercarn have not been passed by unnoticed.

The Queen has been graciously pleased to confer the "Albert Medal of the First Class" on HENRY DAVIES, collier, Abercarn, and JOHN HARRIS, mason, Abercarn, and "Albert Medals of the Second Class" on WILLIAM SIMONS, pumpman, Abercarn; THOMAS HERBERT, pumpman, Abercarn; MILES MOSELEY, overman, Abercarn; CHARLES PEEPLES, collier, Abercarn; WILLIAM WALTERS, collier, Abercarn; and LEWIS HARRIS, overman, Abercarn. The following is an account of the services in respect of which the decoration has been conferred:—On Sept. 11, 1878, an explosion of fire-damp occurred in the Abercarn colliery, in the county of Monmouth, whereby 260 persons perished, and on which occasion the greatest possible gallantry was exhibited in saving about 90 lives. The force of the explosion was terrific, doing great damage to the roadways and to the bottom of the shaft, and setting the coal and timber on fire in several places. Into this state of confusion and apparent danger to life these men without hesitation descended, and although they discovered that fires were raging in the mine, and that consequently the chances of another explosion were considerable, they remained at their gallant and humane work of rescue, not reascending the shaft until they had satisfied themselves that no one was left alive below. HENRY DAVIES, after being down the Abercarn Pit all the afternoon with those recommended for the Second Class Medal, volunteered to descend the Cwmarn Pit (a shaft some two miles distant), with a view of conveying to the explorers, who had attempted to enter the workings from that side, an order from those in charge of the operations to come out, as in consequence of the fires underground continuing to burn fiercely, and large quantities of gas pouring out of the workings, a second explosion was deemed to be inevitable, which had occurred would assuredly have killed every man below ground. HENRY DAVIES, after being deserted by two men who refused to accompany him further, and when he must have felt there was little or no chance of his coming alive out of the pit, pursued his course alone for 500 or 600 yards, and heroically accomplished the object of his mission. JOHN HARRIS went down the pit with those recommended for the Second Class Medal. Having descended to a depth of about 200 yards, the progress of the cage was stayed by the damaged state of the shaft. JOHN HARRIS got off the cage, and sliding down a guide-rope, reached the bottom, where, although he knew well that any moment might be his last, he remained for many hours, until all who were alive (some of whom were badly burnt and otherwise injured) reached the cage by his assistance, and were taken to the surface in safety.

## EXPERIMENTS WITH MINERS' SAFETY-LAMPS.

A series of experiments for the purpose of testing the relative value of the various safety lamps at present in use in mines was made, on Thursday, by Mr. SMETHURST, at the Garswood Hall Colliery, Bryn, near Wigan, in the presence of the members of the Manchester Geological Society and a number of the mining engineers of the district. For the purpose of the experiments, which have been carried on for some time by Mr. SMETHURST, there has been constructed with wooden boards a model of a coal working, consisting of two levels and a cut through of 12 in. by 6 in. section, and three drifts out of the top level 12 in. by 12 in., with brattices up the centre, and with glasses placed in the sides in various parts to enable the spectators to observe the effect produced when an explosion occurred; and to test the lamps which were placed in the model gas drawn direct from the colliery was passed at different velocities, ranging from 500 ft. to 1000 ft. per minute, through the miniature workings. The experiments commenced first with the small Davy lamp,  $\frac{1}{2}$  in. diameter of gauge, and was followed with the ordinary 1  $\frac{1}{2}$  in. gauge used in collieries first without shields, and then with shields placed

that the light was not so steady in a strong current, and an adaptation of the Clanny lamp to the Müsseler principle, which also proved to be a very good lamp. Other lamps were also tried, but with the exception of the last three there were very few that were not liable to explode when they came in contact with a large quantity of gas forced upon them by a strong current.

Afterwards experiments were tried by mixing coal dust with the air passing through the model workings, and when the lamps "fired" it was at once seen by the large increase of flame how dangerous an element the admixture of coal dust became in the event of an explosion. The experiments were concluded by a miniature explosion in the model set of workings, for the purpose of showing where the most damage is done in a mine. The point of ignition, which was effected by one of the Scotch lamps, was the furthest from the intake of fresh air, and the greatest damage was done nearest to the intake, and furthest from the point of ignition.

#### EUROPEAN INVENTIONS IN JAPAN.

It appears that although the Japanese have sufficient discernment to recognise the superiority of British products and British inventions, and to profit by the use of them, they have not yet sufficiently studied English jurisprudence to appreciate the necessity of the encouragement given to inventors in this country in order to secure their services, but have preferred the system of ignoring inventors followed in Holland and Switzerland. The imitation of British trade marks by the Japanese has recently been referred to, and the Rising Sun and Nagasaki Express of May 3 notices the imitation of an English invention of a class in which the readers of the Journal are much more directly interested. It appears that a well-known firm in Nagasaki recently imported a Jordan's patent rock-drill for use at Inakasima, where blasting is constantly going on, but no sooner did the officials at the Government works at Akenoura hear of its arrival and its excellent results than an exact copy was made, which may now be seen in the Nagasaki Exhibition. The Japanese specimen is excellently made, and, and reflects credit on those who undertook the work, but the higher question of infringement of foreign patents is one which may fairly occupy the attention of Ministers.

If Japan is to hold her place among the advanced nations of the world a guarantee will have to be given that foreign inventors shall meet with that honesty to which their genius and labour entitle them, otherwise there are but two courses open to inventors and patentees, either to refuse to allow their patents to be imported, or to place such an exorbitant limit upon their goods as will virtually amount to a sale of patent right. We should be sorry, continues the Rising Sun, to see Japan, a young country in the race towards civilisation, fettering herself with such a heavy load as the non-observance of patent rights must necessarily imply, and we cannot help feeling that the matter is one of sufficient importance to commend itself to all well-wishers of the country, the more so as in the present instance this unjustifiable imitation was completed under the aegis of Government officialdom.

Such unfairness has naturally caused great irritation and annoyance to the firm in this country which purchased the drill, and writing to the inventors—Messrs. JORDAN, SON, and MRIHE, of Queen Victoria-street—remark that with reference to the Hand Power Rock Drill, which they purchased for export to Japan, their friends inform them that directly its results were noticed the officials at the Nagasaki Government Factory were set to work to imitate it, and as they have but little doubt that they were successful, and that the machine will in future be made on the spot, they fear that all chance of securing repeat orders—for which they confidently looked—is quite gone. They consider the drill to be especially suitable for use in many undertakings now being carried on in Japan, and think the authorities there were alive to the fact after noticing the result obtained from the machine sent out, and which proved a complete success.

#### LEAD TRADE PROSPECTS IN AMERICA.

The improving prospects of the lead trade in America have been several times referred to in the *Mining Journal* during the past few weeks, but owing to depression which has so long been felt in this country there has been an indisposition to believe that the improvement resulted from other than a mere spurt. It is gratifying to find that this is not the case, but that it is distinctly traceable to the steady development of the country. The Missouri Basin is that upon which the whole United States is dependent for its supply of soft lead, so that the movement of the St. Louis Lead Market really represents the variation of the lead trade of the United States generally. The subjoined statistics, obtained from authentic sources, extending from 1863 to Aug. 1 of the present year, and thus covering a period of nearly 17 years will be of considerable interest to all readers of the *Mining Journal* connected with the lead trade, whether the mines which they are working be situated in this country or abroad:—

Year.	Number of pigs.	Pigs.	Per cent.
1863	79,823	79,823	—
1864	93,035	... Increase 13,212	16 56
1865	116,636	Ditto 23,601	25 36
1866	149,584	Ditto 32,948	25 25
1867	144,555	—	—
1868	185,823	... Increase 41,268	28 55
1869	228,303	Ditto 42,480	22 86
1870	237,939	Ditto 9,636	04 23
1871	229,796	—	—
1872	285,769	... Increase 55,973	24 36
1873	356,037	Ditto 70,268	24 60
1874	479,448	Ditto 123,411	34 66
1875	579,202	Ditto 99,754	21 00
1876	665,557	Ditto 86,355	14 91
1877	790,028	Ditto 124,471	18 70
1878	754,357	... Decrease 35,671	4 50
1879—July 26	355,431	Ditto 44,922	12 50

It will be observed that the average rate of increase per annum in the receipts was 19 per cent. from 1863 to 1877, when the maximum was reached. In 1878 the receipts fell off 35,671 pigs, and from Jan 1, 1879, to July 26 there was a further *pro rata* decrease of about 77,009 pigs for the year. If the same percentage of increase in receipts had been maintained for 1878 and 1879 that had extended through the 16 previous years, the receipts for 1878 would have been 940,133 pigs, and for 1879, 1,118,758 pigs. Instead, therefore, of there being any over supply of lead coming into the St. Louis market, if we take the average basis of increase the deficiency this year will be something like 328,730 pigs, or over 12,000 tons. This decrease in the production in the great Missouri Lead Basin has arisen from several causes:—

1.—Some of the largest and most productive mines where the owners received a royalty of 15 per cent. were not worked, because when the leases expired lead had fallen from the previous high prices, and the owners and lessees did not come to terms. These mines had to contend with an immense volume of water, and were very costly to work. Serious questions arose between the parties in interest, and the leases were not renewed.

2.—About one-third of the entire supply of soft Missouri lead was the product of the labour of prospectors, or men working on tribute on lands where the ore was found near the surface in pockets, patches, and sheets. These miners have been attracted by high wages to Colorado, Utah, Montana, New Mexico, and Arizona. The same labour, therefore, that formerly produced lead in Missouri is now producing it in the argenteriferous states in the Far West. This transfer, of course, reduces the output of Missouri in favour of the argenteriferous ores; lead from these latter ores, however, requires expensive treatment, pays very high rates for transportation, is a very inferior quality to soft Missouri, and would never be mined except for the silver combined with it.

It is the opinion of experts who have carefully examined into the subject that the argenteriferous lead of the Far West will not interfere in the St. Louis market with the virgin lead of Missouri. The

freight alone on pig-lead from Leadville, after the railway is completed to that place, will be 18d. per ton to St. Louis. It is also stated on good authority that the output of lead at Leadville will be absorbed for local purposes.

The MISSOURI LEAD MINING AND SMELTING COMPANY (Limited), to which attention was drawn at some length in the *Mining Journal* of May 10, must find in St. Louis a very profitable market, as soft Missouri is now 18d. 9s. 6d. per ton, and the company can deliver it in St. Louis at a cost of 9d. per ton.

The stock of lead in first hands in New York on Aug. 1 was only about 6000 tons. The consumption of lead in the United States was 73,000 tons in 1878. It is estimated it will require about 100,000 tons to meet the increased volume of business for 1879. If the increased consumption of coal and iron be taken as a guide it would exceed that amount, as the quantity of coal used in 1878 was 17,000,000 tons, while the demands for 1879 have been at the rate of 25,000,000 tons, an increase of 50 per cent. The production of pig-iron for 1879 is at the rate of 2,868,278 tons, as against 2,577,361 tons in 1878, and of steel rails over 1,000,000 tons, as against 882,685 tons in 1878.

And what is the more gratifying is the fact that the prospects of the lead market in the United States indicate no over supply, but rather the reverse. The price has advanced steadily from May—from about 15d. per ton to 18d. 2s. 6d., which price is bid in New York, while it is firmly held at 18d. 18s. per ton. Under these circumstances the United States will not export any lead, and England will again have the Oriental markets to supply, and which absorb about 16,000 to 20,000 tons per annum. We should, therefore, see much better prices both for British and American lead at an early day.

Crops of all kinds were never finer or more abundant throughout the United States, and they will enrich that country to the extent of hundreds of millions this year, so that if we do not find again in the United States a customer for our lead we shall sell her a largely increased volume of fabrics and various articles of commerce, and by thus helping our trade generally help our lead market indirectly.

#### MINERAL STATISTICS OF THE UNITED KINGDOM.—In another column of to-day's Journal will be found the first of a series of elaborate articles embodying the Mining Record Office statistics of the mineral wealth of the United Kingdom for 1878.

Considering the serious depression from which the country has been suffering, it will give general satisfaction to learn that the mineral produce of the kingdom has declined less than 1,000,000, the grand total being 67,339,281 for 1878, and 68,281,406 for the preceding year. The price per ton of coal has not declined at all, and even the output has diminished by only 2,000,000 tons, the production still being 132,607,866 tons of the value of 46,412,753. In 1877 only about 18d. worth of gold ore was produced, whilst 1878 shows 702 ozs. of gold better than standard, as it fetched over 4d. 1s. per oz. The price of some of the best Australian— or 2848d. 15s. 2d. for the whole. The 10,106 tons of tin produced averaged over 65d. per ton; the 3952 tons of copper nearly 70d., and the 58,020 tons of lead nearly 17d. per ton. The cause of the low prices are found in the enormously increased production of foreign mines, without a corresponding increase in the demand, the result of which has been so disastrous to home mines that, taking the case of copper for example, the quantity of copper furnace stuff of all kinds—British, colonial, and foreign—smelted increased from 34,000 tons in 1870 to 62,000 tons in 1878, yet of this the proportion of British was 7176 tons in 1870, and only 3952 tons in 1878, both these quantities being lamentably small when compared with 15,968 tons, the figure for 1860. The low prices have had a slightly good effect in stopping the importation of copper ore, but as the imports of regulus and part wrought remain about the same, the diminishing prices paid to the miners for their ore during the current year is fully explained. The movement in the other metals referred to in the statistics has been affected by similar causes, and consequently show corresponding results.

MEETING IN GERMANY OF THE IRON AND STEEL INSTITUTE.—That a visit to the iron and steel manufactories of the Rhine would be alike interesting and instructive to many members of the Iron and Steel Institute can well be supposed; it is, therefore, gratifying to learn that a communication has been received from Mr. Baare, the general secretary of the Bochum Steelworks, to the effect that some of the most important steel makers in Germany have invited the Iron and Steel Institute to hold their next autumn meeting in 1880 at Dusseldorf, on the Rhine. The initiative in this matter has been taken by members of the iron and steel trade in that neighbourhood, who are also members of the Iron and Steel Institute of England. During next autumn an important Exhibition of Art and Sciences and Industry will be held at Dusseldorf, and excursions to steel and iron works, &c., as well as an excursion up the Rhine to some of the finest parts of that river would be arranged for. As it is thought desirable that some intimation of this idea should be given to the members of the Iron and Steel Institute before the Liverpool meeting the subject is here mentioned. The meeting would certainly be enjoyable, and our German friends are, it appears, very anxious to be at last afforded the opportunity of returning to some extent the many acts of courtesy and hospitality enjoyed by them so repeatedly in England.

EARLY COAL PITS IN YORKSHIRE.—It has been generally understood that coal was not worked in Yorkshire until towards the close of the 15th century, but it has just been discovered that it was known and used at a much earlier date. Recently, in looking over the records of the Coroners' Rolls for certain purposes, it was found that in the 40th of Edward III, or 1367, the jurors from Ossett, Thornhill, Shitlington, and Flockton presented that on the Wednesday next before the Feast of the Nativity of our Lord at Ossett, Adam Adamson of Gathorpe accidentally fell into a coal pit and broke his neck, whereby he instantly died. From the same roll it appears that Sharlstone, Crofton, Snydale, and Warmwell presented that on the Monday next before the Nativity of our Lord, in the same year, Margaret, the wife of William de Folby, fell into a sea-coal pit, and by accident was drowned. In the year following, on the Wednesday next before the Feast of St. Martin, Thomas Fytng, digging coal in a coal pit at Flanshaw, was accidentally crushed and killed by a large quantity of roof falling upon him. In the 13th year of the reign of King Richard II, which would be 1390, there is a sum charged as the profits and expenses of the lordship of Wakefield of 6s. for a coal pit at Outwood, which belonged to one John Kirby. In the same year 7s. was paid for a coal pit let to John Collier for the same period. Leland, in his Itinerary, written about 350 years ago, says—"There be plenty of veins of sea coal in the quarters about Wakefield;" and when going from Wakefield to Pontefract remarked—"Almost in the middle way I left coal pits a little off on the right hand, not far from the principal head of the River Went." Outwood, it may be said, at the period named was covered with timber, which must have been used for fuel, for it appears to have been afterwards denuded of timber. The term sea coal appears to have been applied to seams similar to those known in the North of England, and shows also that an inferior quality, in all probability largely composed of shale, was better known. Verily, these old coroners' rolls must contain a vast amount of information which our written history has not recorded, and we are glad to find that the researches of the Mayor of Wakefield, who is the coroner for the honour of Pontefract, has called attention to them, as it is not unlikely that some of our antiquaries and literary students may find in them a rich material of interest to those who desire to be acquainted with the past history of what has grown to be the most important of all the industries of Great Britain.

PROPOSED LOTTERY FOR A COLLIERY.—An extraordinary prospectus has been issued by Messrs. Eaton and Partner, of Chesterfield, for the purpose of "taking in one or more partners" to complete the development of a "proposed colliery at Hady, near Chesterfield," but as the hotel keeper, whose name was given as receiver of the subscriptions repudiated, through his solicitor, any knowledge of the lottery previously to receiving one of the prospectuses issued, and as Mr. W. F. Howard, the secretary of the Chesterfield and Derbyshire Institute of Mining Engineers (the name

of which was also mentioned in the prospectus), was equally prompt in announcing that "neither the council nor any meeting of the institute has to my certain knowledge ever been communicated with on the subject," and that, therefore, the mention of its name was unwarrantable, it is probable that fewer have been taken in than was intended. The most charitable conclusion to draw is that Eaton and Partner are a pair of ignorant labourers, who think that with a 12-horse power engine and the promise of a lease of 20 acres of land supposed to have coal under it, they can make their fortune, and that their ingenuity in framing a lottery prospectus exceeded their knowledge of the law of the matter.

#### REPORT FROM CORNWALL.

August 21.—When we remarked last week, in commenting upon the upward movement in the tin standard, that we believed "the figure would be materially enhanced ere long," we certainly did not anticipate having within a few days to record another rise of 3d. Nor in this were we at all singular. There were those who even doubted the soundness of any rise at all, and certainly that there should be an advance in the total of 5d. in a week was far more than could reasonably have been anticipated by any calculation, and forecast as closely as you will, there are vagaries in the tin market that puzzle even the most experienced. We have again and again given our reason for holding that a rise substantial and permanent was certain. Assuredly there is nothing that has taken place of late that would be likely to lead to a different conclusion. Nothing has stimulated production so much as low prices, and the effort to make both ends meet. With a fair return for produce we are not likely to see any material increase in the output of the existing tin mines. Any increased production in this country is far more likely to come from opening up other concerns, to which a continuance of high or reasonable prices would be sure to lead. Against this, however, we have to set the prospects of an increased demand, and these we hold to be favourable, inasmuch as trade can hardly be at a much lower ebb than it is at present, and the balance of change must, therefore, be in our favour. It seems to us that the area and bases of calculation are reduced within narrower limits than they were, and are being reduced still further, and that, therefore, we are gradually returning to a state of things in which it will be once more possible to draw general conclusions from the condition of affairs at home, in which tin mining in Cornwall will be restored to something like its old settled condition, disturbing elements, it is true, still existing, but their influence reduced to a minimum of what it used to be, and at all events more readily appreciated. Probably we shall see some little oscillation in the tin standard before it ascends much higher, but meanwhile the prospects of continuous better prices are certainly good.

Copper shows less inclination to move, though even here there is a revival after stagnation, and the special prospects of some of our mines are looking up. There is West Tofigs, for example, which has cut a new course of ore, and is not unlikely speedily to come back again into the Dividend List. It is only too clear an indication of what the state of things is in regard to copper mining when we find such a mine as South Caradon not falling off in productivity, but obliged to suspend dividends because of the low price of produce. Copper has fallen back much more in proportion than tin, and our copper mines now are so much fewer than our tin, that this fact has attracted less attention than it deserves.

It would be out of place to comment on the case of Mr. Brydges Willyams and the Teign Valley Mining Company, in which the official liquidator seeks to settle that gentleman as a contributory, while it is yet *sub judice*, but we may express our approval of the steps taken by the Vice-Warden to obtain additional evidence. The present position of the case is most unsatisfactory from any point of view.

Well deserved honour has been done to one of the oldest business men in Cornwall by the presentation of a testimonial portrait to Mr. R. R. Broad, of Falmouth, which will be hung in the Town Hall of that borough, with which he has been associated for seventy years. Mr. Broad has had a good deal to do with mining matters, and has long been prominently connected with one of the most prosperous mines in the county—East Pool.

Ample proof of the condition of commercial, and especially of mining, matters in the county is afforded, as usual, by the report of the Cornwall Railway Company. When county has only one trunk line of railway its traffic supplies a very close test of the prosperity or otherwise of the district. The report for the half-year shows that the gross receipts were 61,722l. as against 64,451l. in the corresponding period of last year. The passenger, parcel, and mail receipts aggregated 38,163l., as against 38,651l. in the corresponding half-year of 1878. The total number of all classes of passengers carried was 341,145, as against 352,264 during the same period of 1878. The total receipts on account of merchandise, live stock, and minerals was 22,801l., as against 24,915l. in the corresponding period. The working expenses for the half-year were 34,375l., as against 35,787l. The result of the half-year's working is that the Associated Companies have to provide 5373l. to cover their guarantees, as against 3540l. in the corresponding half-year.

The bazaar and *fête* held at Tehidy in aid of the Miners' Association has cleared a net receipt of some 200l. This is very satisfactory, and all the more so inasmuch as there are a good many articles unsold, with which it has been decided to furnish a bazaar at Falmouth at the time of the annual meeting, the week after next.

#### REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Aug. 21.—The Chester Town Council have received a report in which the late poisoning of the fish on the River Dee is traced to the lime refuse that found its way into a tributary stream from the Minera Lime Quarries above Wrexham. In the discussion that ensued upon the reading of the report Mr. Salusbury remarked that the sewage of 100,000 people found its way into the Dee before the Chester people derived their drinking water from it. I have no doubt that Mr. Salusbury is mainly right, and that his remarks are true in a greater or less degree concerning the relation between effluent sewage and the derivation of drinking water from every considerable river in the United Kingdom.

The colliery owners of the district have Mark Tapley's qualification of being "jolly under creditable circumstances." The circumstances could not well be more depressing, nor the utterances of the colliery proprietors at convivial meetings which still abound much more jolly. An illustration of this occurred in the speech of Mr. Darlington, of the Black Park Colliery, at the recent annual festival of the Chirk Union Friendly Society, and I trust there is truth in his remark that "We are on the eve of a turn, and that we have got to the very worst of the depression."

near the town, and is called a water-level, penetrating the mountain to the distance of nearly 1700 yards, cut through the rock 6 ft. high and 4 ft. wide. The water, which is a running stream, forms a channel of nearly 3 ft. deep, navigated by boats long, narrow, and flat, sharp at each end, and forced up and down the level by the workmen pushing with their hands against the sides of the rock. This great work was begun about 24 years ago (1776) by a company of gentlemen, who have continued it with unconquerable patience and unremitting perseverance ever since, in spite of the ill success which attended their labours for many years. After having penetrated the rock for 600 yards, the workmen met with a vein of ore that produced about 80 tons, but except this discovery they found nothing to repay the great expense of driving the level, amounting to 6000*l.*, till about four years since (1796), when they struck another vein of great thickness, which they have not yet exhausted. Six men are constantly employed in continuing this subterranean passage, who cut it by contract, having from 4*l.* to 8*l.* per yard, according to the nature of the rock." Mr. Warren describes very vividly the immense underground workings of the mine, and also the nature of the strata. For the first hundred yards the beds are limestone, the next 500 yards consists of chert, "quantities of which are sent into Staffordshire for use in the potteries." Is this so now? Then the tunnel is continued in hard limestone, and at last reaches a huge cavern called the Hotel, because there the proprietors entertained their friends. From the Hotel level is taken at right angles to the main tunnel into the mountain, leading first to a cavern 17 yards long and 30 ft. high, whose rude sides are embossed with spar, and its lofty fretted roof covered with beautiful encrustations. Close by was a rich vein 6 ft. thick, dipping down towards the level (northward). Here the miners were at work for 1*l.* 8*s.* per day, the dressed lead ore being sold at that date (1800) —"it being a time of war and public misery"—for 7*l.* or 8*l.* a ton. The number of miners and colliers around Holywell at that time was about 700.

The storms of Saturday and Sunday have made sad havoc of the London and North-Western Railway from Chester to Holyhead, washing away bridges and embankments, so that it is calculated it will take a fortnight before the regular traffic can be resumed.

#### REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

*Aug. 21.*—An accident of a serious nature has occurred on the Taff Vale Railway. The engine left the rails on the Cowbridge branch and went down the embankment. A number of persons have been injured, but as yet no deaths are reported. Summonses have been issued against the directors of the West of England Bank, and this *cause célèbre* will probably be commenced before the Bristol magistrates on Tuesday next. The report of the Swansea Wagon Company shows that no profit has been made during the 12 months ending June 30, and as a consequence no dividend can be declared. The loss is covered by profits made in the previous year. Bad trade is reported as the cause of this falling off.

An important case, inasmuch as no less than 2500 colliers were interested in it, has been heard at the Tredegar County Court. The case was a test one, and was brought by Wm. Narberth, a collier, to recover the sum of 13*s.* 3*d.* alleged to have been illegally deducted from his earnings during six weeks by the Ebbw Vale Company. The question was whether the company had a right to enforce a reduction of 10 per cent. in wages without, as was alleged, giving proper notice. On the part of the company it was shown that certain notices had been issued in the usual manner, and his Honour gave judgment for the defendant company, and he added that he would give plaintiff a chance of appealing. At the Aberdare Police Court a collier named George Watkins has been summoned for breach of contract towards his employers, the proprietors of the Llwyd Shewkin Colliery. Damages to the extent of 10*l.* were claimed. A number of men were also interested in this case. An order was made for defendant to pay 3*l.* and costs, 1*l.* 17*s.* 6*d.* A dispute also exists at the Pentre Colliery, and summonses have been granted against two of the men on strike for illegally absenting themselves from work. There is also a strike at the Rhosllantwit Colliery, in the Caerphilly district.

There having been a movement made with the view of asking Mr. W. T. Crawshay, of Cyfarthfa, to become a candidate for Merthyr at the next parliamentary election, he has replied that he must decline the honour suggested.

The Iron and Steel Trades have been fairly active during the past week. More hopeful anticipations with regard to the American demand can be indulged, and there are two or three orders already reported as being placed in this country. Another question which is now being raised is whether, after all, steel (Bessemer) rails are superior to iron rails such as were made in this district years ago. A correspondent points out that "upon the Great Western Railway between Swindon and Bristol and between Chepstow and Swansea there are large numbers of rails now in daily use which were manufactured in South Wales in the year 1846, and which have consequently exceeded in duration and wearing power anything that has yet been produced in Bessemer steel." As a matter of fact, the iron rail department has not yet reached that state of collapse which many would have us believe. There is at present a rather better enquiry for it. Bessemer steel rails are in fair request. Bars are unchanged. Clearances during the past few days have been small. The Tin-Plate Trade has not materially changed. The men seem still indisposed to accept the reductions in wages asked for. The demand for coals is good, and since affairs have been settled between masters and men there is more work doing at several of the pits. At the house pits there is more business observable in the Rhymney Valley. The quantity of steam coal cleared is large, but, as will be seen by the returns published below, last month's shipments fell off considerably. House coals are in average request. Patent fuel is a slow sale. Prices are unaltered. The Coedcae Colliery Company have succeeded in reaching the Nine-feet seam of steam coal at their pit in the Rhondda Valley, near Pontypridd. Other valuable seams of coal are proved to exist in the pit.

Last month Newport shipped 10,831 tons of iron, against 12,354 tons in the corresponding month of last year; Cardiff, 6180, compared with 6056 tons; and Swansea, 405, compared with 12 tons. In the same period Cardiff shipped to foreign ports 323,483 tons of coal, compared with 365,630 tons; Newport, 69,340 compared with 80,777 tons; Swansea, 55,006, compared with 57,809 tons; and Llanelli, 3722, compared with 6448 tons. Cardiff shipped coastwise 56,182 tons, against 78,470 tons; Newport, 71,971, against 79,563 tons; Swansea, 40,755, against 21,907 tons; and Llanelli, 12,258, against 13,763 tons. The clearances of patent fuel were—Cardiff, 13,314, compared with 19,713 tons; and Swansea, 10,181, compared with 12,485 tons.

The Queen has conferred the Albert Medal of the First Class on Henry Davies, collier, and John Harris, mason, both of Abercarne, and the Medal of the Second Class on six others, for services rendered by them in saving life on the occasion of the explosion at the Abercarne Colliery on Sept. 11 last. The statement accompanying the official announcement of the honour thus conferred upon Davies and Harris and their companions shows that the reward was well deserved. These men, especially the two first, had, with a simple courage by no means exceptional under such circumstances, placed their own lives in imminent peril that they might rescue the survivors of one of the most terrible explosions recorded in the annals of Welsh mining. The explosion resulted in the death of 260 persons, and but for the exertions of Davies and Harris that number would have been increased to more than 350. The severity of the explosion had destroyed most of the gearing, and had blocked the workings to an extent which rendered egress from the drifts exceedingly difficult. These two men descended the shafts as soon as possible after the explosion, forced their way from point to point, and aided the survivors in their escape. We have spoken of these acts as acts of courage, for though the men were themselves probably unconscious of any motive other than that of the impulse to save the lives of those who had been placed in peril by the explosion, they were strengthened and guided by a resolution and confidence which constitute the highest form of heroism. They had no personal object to gain. There was no thought of reward or honour.

They knew that if the lives which had been spared by the explosion and the after-damp were to be saved they must be saved at once, and without thought of the risk which must be incurred in accomplishing that object they entered upon their task. Acting on such impulse, they discharged their self-imposed duty in a manner which merited and has received the highest recognition. Their names have been placed on the roll of the new Order, and the only regret is, that services equally distinguished have no such record, for the simple reason that the Order is itself of recent creation. There is no field of danger so rich in true heroism as that of the mining industry of the United Kingdom, and none, we are proud to think, will contribute so many names as recipients for the Albert Medal.

#### TRADE OF THE TYNE AND WEAR.

*Aug. 20.*—There is little change to report since our last. The Steam Coal Trade is quite as good, and all the first-class works in Northumberland are regularly employed; and if this continues, which is almost certain to be the case, some of the works closed owing to the depression will be restarted shortly. A large quantity of this coal has been shipped for export, and the sailing of vessels in the coasting trade has also been above the average during the past week. In Durham the works are not so fully employed, but some of the best gas coal works are fully employed six days per week, and at Pontop Colliery one of the pits closed some time ago has been reopened. The coking trade continues rather flat, and this also is the case with the trade for manufacturing coal. The house coal trade is also quiet, but there are signs of improvement in this branch also. The shipment of coal at Tyne Dock and other important points has been large of late—90,000 tons per week is considered an average at Tyne Dock, but this was exceeded during the past week, and on Tuesday 22,000 tons were shipped there, which is the largest quantity ever shipped in one day. The shipments at the Sunderland Docks have also been large.

There is no attempt made either on the part of the masters or men in this district to restrict the output of coal, and some of the works are kept going 12 days per fortnight. There is still a good supply of hands of all kinds for collieries, but the number of men unemployed is fast being reduced; this is partly owing to emigration. The exodus of coal miners, which commenced some time ago, goes steadily on, and appears to increase. The greatest number of men go to the American Continent, but a considerable number have also gone to New Zealand and to Australia. The accounts received from those men who have gone to Australia are favourable, they can earn much better wages there than in this district at present, and the coal trade there has improved much lately. From America the men do not report favourably, but some improvement has taken place of late in the coal and iron trades there also.

The improved feeling in the pig-iron trade continues, and prices are slowly but steadily rising. Makers are inclined to ask higher rates than the quotation of last week, which were—No. 1, 37*s.* 6*d.* to 38*s.* The indications are that the value of iron will be enhanced next month, as the markets in Scotland, the Midlands, and in South Wales are improving, and the accounts from America are also encouraging. It is possible that this prosperous state of trade may not continue—a relapse may possibly occur, but at present the impression prevails that this will not occur. There is more disposition to buy for forward delivery at present, but sellers wish to secure higher prices. There is a better demand for bars, and prices are 5*l.* per ton. At Middlesbrough, on Tuesday, the market was firm, and a great deal of business has been done during the last few days at about 3*l.* net, No. 3. This was the price consumers offered that day, but makers' quotations ranged from 3*l.* 6*s.* to 3*l.* 3*s.* net, and most of them are pretty firm at this figure, grey forge being 3*l.* 3*s.* 6*d.* The attendance has been small, owing to local races. The stock in Connell's stores stood at 81,900 tons. A slight reduction in the quantity held last week. Pig-iron producers are rather encouraged by the extra shipments coastwise to Scotland especially; last month the smallest quantity for many years was forwarded. Last week showed the highest record for a very long time past. The quantity shipped from Middlesbrough on Scotch account being 6100 tons. Altogether about 17,000 tons were shipped from the Tees and adjacent ports for foreign and coastwise account. The advance of prices in the Scotch market within the past few days has been considered a good omen in this district, as also the better reports from South Wales and other districts. Messrs. Bolckow and Co. are reducing the wages of the men at their steelworks at Eston. About 2000 tons of steel rails are turned out per week at this concern.

The wages question in the iron trade is also to be considered this week at Darlington. Shipbuilding on the Tees is very quiet. The demand for plates is slack. On the Tyne iron shipbuilding continues fairly prosperous. Engineers, on the whole, are only moderately employed. Founders are many of them well off for orders at present. The Chemical Trade continues firm, and it is evidently improving; the trade is free from fluctuation, and the business done is *bona fide*, not speculative. The tone of business is well sustained. The consumption of salt and other raw material shows that the manufacture of chemicals is large, and at the same time stocks are not large. It is pretty evident that the trade is well clear of needy sellers at present, and that the trade which is doing is *bona fide*. According to the telegraphic advices which are coming to hand daily the movement of the North Country steamers are very active, and this large fleet of useful vessels contributes a good share to the great changes which are taking place in the carrying trade of the world. It is true that only small profits have been earned lately by steamers, but some slight improvement in this respect has occurred, and the prospect is rather cheery at present.

**LEAD MINING AT ALSTON.**—As noticed some time ago an attempt is to be made to get the dues to the lessors reduced in this district. Should this be effected, which is considered likely, it is expected that a larger number of men will be employed. This trade has been in a very dull state for some time. The lead mines in the Weardale district are improving, as there are some young mines there, such as Green Hurth, Dubby Syke, &c., which are considered to be very promising, some valuable lodes having been proved and partly opened.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

*Aug. 21.*—The decision came to by the Duke of Devonshire with respect to the mineral dues on lead ores raised in the districts in which he is the lessor has not yet transpired, but there is no doubt but what it will be favourable, if not to the extent asked. Some few mines appear to be doing tolerably well, but the majority must be having a hard time of it, for with lead at the price it is not easy to see how mining can be profitably carried on. The fall off in our imports, however, lead many persons to believe that we are on the eve of a marked change for the better, but it appears premature at present to come to such a conclusion. Ironstone mining is not carried on to the extent it was a few years ago either in the Chesterfield or Erewash Valley districts, in consequence of the rate at which it can be obtained in Northamptonshire and Lincolnshire. Recently there has been a better demand for Derbyshire pig, and there is now some prospect of a general improvement with rather better prices. At Dronfield there has been a steady out-put of Bessemer rails, and one of the partners in the firm, Mr. Wilson, has succeeded in producing a composite plate of steel fused in iron that is likely to be adopted by the Admiralty. In some experiments made a few days ago at Portsmouth the plate was not penetrated by the heavy projectile with which it was attacked, the deepest crack made having been only about 1-18th of an inch. It is, therefore, likely that Sheffield, where the plate was made, will still maintain the position it has long held as the great producer of armour-plates for the British as well as other navies. Of late coal for household purposes has gone off tolerably well, and several of the principal collieries in Derbyshire have sent a large tonnage for the time of the year over the Midland Railway to London and the South. Still there are a good many colliers totally unemployed, and at a few places the wages question is still in an undecided state. The price of coal is certainly at a point at which profits cannot be

made, and there is no likelihood of an advance, just at present at least. The consumption of coke appears to be increasing in Sheffield and the districts, so that there has been an increase in the production.

In several of the Sheffield branches of trade more is now being done than for several weeks past, both on home account and for export. The old staple industries, such as cutlery, saws, files, edge tools, and scissors, are not particularly active, but several of the heavy branches are much better off. More is being done in armour-plates, as well as in lighter ones for boilers and ships, whilst there has also been an improvement with respect to tyres and axles. Of late there has been a falling off at one or two establishments in Bessemer rails, but fresh orders are coming to hand that are likely to keep the mills fully going. Iron rails are not much enquired for, and are now principally made for collieries. Some of our colonies, however, continue to be good customers for steel rails and general goods, and we are now looking forward to an active season for sheep shears, although some little opposition has been shown on the part of continental makers, who produce a cheaper but an inferior article. Railway and other springs are quiet, but a steady business is still being done in telegraph wire. The foundries are still comparatively quiet, even for light and ornamental castings for builders, the demand for which is usually brisk at this time of year.

In South Yorkshire the Coal Trade is much as it has been for the last two or three weeks, but as colliery owners state that they are working without profit, and in some instances at a loss, a change at several places must inevitably take place. The present rate of wages cannot be maintained unless there is a change for the better, and there is no appearance of this taking place. The London trade keeps up very well for the season, and a steady business is being done in steam coal for shipment from Grimsby to the Baltic. A considerable number of miners are now walking about, as several collieries are still standing, whilst others are under notice to leave unless they submit to a reduction of wages. At Carlton Main, one of the largest collieries in the district, a number of the men refused to submit to a reduction of wages, and refusing to give up the houses held by them from the company, have been ordered to be ejected if they refuse to give up peaceful possession.

On Monday a petition in bankruptcy was filed in the Barnsley County Court on behalf of Mr. Joseph Carnesley, coal merchant, of Barnsley and Bradford, and late a director of the Stanhope Silkstone Colliery, now in liquidation. The liabilities are estimated at 15,000*l.*, and the assets are not likely to be large.

**AMERICAN ORDERS FOR BESSEMER RAILS.**—It is understood that a house in Sheffield has just secured an order from America for 15,000 tons of Bessemer rails, and that another order is likely to be secured by another firm in the same place.

At Ilkeston the men employed at the collieries of Messrs. Barber and Walker have received notice of a reduction of wages. The men have been working nine hours a day, and it is expected the proposed reduction will be accepted.

**THE OAKS EXPLOSION.**—A committee having been formed some time since to collect subscriptions for the erection of a monument in Ardsley Churchyard to the memory of the men who were killed by the explosion in 1866, upwards of 80*l.* has been received, and as more subscriptions are expected an order has been given for the execution of the work to Mr. Oxley, who erected the memorial in Ardsley Churchyard to the men who were killed by the explosion at Lund Hill in 1857.

A cheque for 100*l.* has been received from Mr. C. Markham, the managing director of the Staveley Iron and Coal Company, towards the Library Fund in connection with the Stephenson Memorial Hall at Chesterfield.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

*Aug. 21.*—At the meeting of the Iron and Coal Trades in South Staffordshire this week a decided improvement was manifest. The change for the better which set in last week has gone on, and has increased. Buyers are now seriously calculating whether they have not remained out of the market quite long enough, even if not too long, and the conclusions to which some of them, at any rate, have arrived are seen in the larger number of orders which iron makers and coal owners are this week receiving. And the better sale is accompanied with better prices. Raw and manufactured iron produced in this and other districts is stronger than at the date of the last report, and consumers' offers, based upon the quotations which then existed, are being refused. The most important feature of the finished iron market is that galvanised sheets have been advanced variously from 15*s.* to 1*l.* and 1*l.* 5*s.* per ton, because of the rapid upward tendency of the spelter market. Users who have refrained from buying as long as possible are now ordering at the rise, but merchants who do a foreign trade refuse to believe in its permanency. Makers, however, are generally firm at the advance, and will not accept less than 14*l.* for 24 gauge delivered in London in bundles. Tin-plate makers, too, are firmer, and some of them seek a rise of 2*s.* a box on coke plates. The condition of the coal trade is more satisfactory than recently, and if the iron trade should continue to improve the demand at the pits will be considerably augmented. The colliers are once again intimating their intention of waiting by deputation upon the leading masters to ask them to advance the price of coal, so that they may secure better wages.

At the close of 'Change hours in Birmingham, on Thursday afternoon, leading galvanised sheet firms were declining to accept the prices they quoted in the morning. Some makers were strong at 15*l.* for 24-gauge in bundles in London. The holders of spelter demanded a rise of 30*s.* upon the previous day of 20*l.* per ton, for a continental telegram had been received announcing sales at the outports at over 10*l.* Consumers held back, yet vendors would not abate their demand. One or two sales of black sheets followed at 5*l.* advance.

The directors' report of the Cannock and Huntington Colliery Company, just issued, referring to the accident which occurred at No. 1 pit last June, when twenty-six of the iron tubs, with which the shaft has to be lined, sunk to the bottom of the pit, states that it is hoped that by the end of this month the raising of the tubs will be commenced by Mons. Chaudron, by the aid of special machinery. In No. 2 pit the excavation to the full diameter has been completed to a depth of 412 ft., but owing to a difference in the level of the coal measures at the two pits it is proposed to continue the sinking to about 434 ft. The directors report with great satisfaction that Lord Hatherton has promised to make important concessions in the matter of the minimum royalties.

The North Staffordshire coal and iron trades remain disturbed by wages disputes. The number of collieries in the Silverdale district where notice has been given for a reduction of 10 per cent. or an increase in the working hours has augmented since my last report. The men on their part still maintain a bold front of resistance. There is a report that ironworkers in the Smallthorne district, on the other hand, have commenced working six extra hours a week rather than suffer a money reduction.

A special general meeting of the shareholders of John Bagnall and Sons (Limited) was held at the Grand Hotel, Birmingham, on Tuesday, Mr. Edward Gorn in the chair. The report and accounts for the six months ending June 30 was submitted by the Chairman, who explained the means the directors had taken to stop unprofitable portions of the concern, and to cut the expenses down to the greatest possible extent. It was stated, in answer to a shareholder, that supposing the securities received from Mr. Albert Grant were to realise nothing, there would be 16,000*l.* to earn before any dividend could be paid. The securities in question were, however, expected to be worth something, though how much remained to be seen. Several shareholders expressed their approval of the efforts made by the directors and manager, and the report was adopted with but one dissentient.

**SKERNE IRON COMPANY, (Limited).**—It will be recollected that some time since an offer was made to the creditors of this company, through a London firm, to accept 15*s.* in 1*l.*, cash down, in settlement of all claims. The creditors, regarding the unsaleable condition of ironworks property and the uncertainty of realisation, have almost without exception accepted the offer, and on Tuesday received at the

hands of the firm which made the offer, Messrs. R. Allen, McLeans and Co. of Old Jewry, London, the stipulated sum. Nothing has transpired as to what is to be done with the works of the company which stand at Darlington, and are capitally laid out for the production of ship plates and also bridge work.

**SALE OF SHARES.**—Messrs. Farrington and Son, on behalf of the trustees of the late Mr. I. Highway, and others, offered the undermentioned shares for sale by auction, at their sale rooms, the Bridge, Walsall, on Tuesday, 100 shares of 100*l.* each (20*l.* paid) in the Staffordshire Joint Stock Bank (Limited), sold in lots of from 10 to 50 each, at 2*l.* per share; 120 fully-paid shares of 10*l.* each in the Sandwell Park Colliery Company (Limited) were offered, and 30 were sold at 12*l.* each, the remainder being withdrawn, no advance on 11*l.* 10*s.* being obtained; 60 fully-paid shares of 10*l.* each in John Bagnall and Sons (Limited) were sold in one lot at 5*s.* each. No offer could be obtained for the following:—55 shares of 10*l.* each (3*l.* paid) in the Staffordshire Wheel and Axle Company (Limited); 20 fully-paid Preference shares of 25*l.* each in the Birmingham (Blakeley Hall) Coal and Ironstone Company (Limited); 173 fully-paid shares of 1*l.* each in the Walsall Agricultural Hall Company (Limited); 5 fully-paid shares of 1*l.* each in the Builder's Trade Circular Company (Limited); 3 shares in the Willingsworth Colliery Company, 10*l.* shares (8*l.* paid); and 2 original 100*l.* shares (84*l.* paid up) in the West Cannock Colliery (Limited).

**PARIS EXHIBITION, 1878—A STRANGE ECONOMY.**—Messrs. Tangye Brothers, of the Cornwall Works, Birmingham, write:—At the close of the above Exhibition our firm were informed that they were awarded three medals—one each gold, silver, and bronze. The gold medal was delivered a short time since; but we have now received from the Commission a certificate stating that we have been awarded silver and bronze medals, and also an intimation that this certificate in lieu of the medals! It reminds one of the *assignats* of a former French Republic; and the cost to the Republic will be about the same. At the last French Exhibition we were also awarded two gold medals, and were told that we could have them upon sending the value of the gold, which we need hardly say we did not do. Doubtless the French Government sees the need of economy, and loses no opportunity of practising it.

**BRITISH AND AMERICAN STEEL GOODS.**—Despite the high tariff and the intensity of American competition in steel rails for railways, several American orders are being placed in England. One order for 15,000 tons has been secured by Brown, Bayley, and Dixon (Limited), Sheffield, and another for a similar quantity has gone either to Barrow or Ebbw Vale, and there is a probability that an order for 10,000 tons more will be placed at Sheffield. The price at which the contracts are entered into is not positively known. It is, however, a few shillings above 4*l.* a ton, a price which leaves but little margin of profit. The reason of the orders finding their way to this country is that English manufacturers are able to offer lower terms than their rivals in America. There can be no doubt that the iron and steel trade is improving. There has of late been much more enquiry than for months past, and in many instances orders will be booked. The prices, however, are so low that manufacturers frequently decline to take them.

## THE COLOMENDY COMPANY (LIMITED).

Incorporated under the Companies Acts, 1862 and 1867.

Capital £20,000, in 4000 Shares of £5 each.

### FIRST ISSUE OF 2000 SHARES.

Payable £1 on application, £1 10*s.* on allotment, and the balance in calls as may be required.

The Shares may, if desired, be fully paid up in advance of calls, receiving interest thereon at £5 per cent. per annum.

#### DIRECTORS:

Subscribers to the Memorandum of Association, the first four of whom will act as Directors until the First General Meeting of the Company.

JAMES ASHWORTH, Esq., Engineer, Southport.  
JOHN ASHWORTH, Esq., Mine Surveyor, Manchester.  
FORSTER GREEN, Esq., Merchant, Belfast.  
CHARLES ELCOCK, Esq., Merchant, Belfast.  
THOMAS EMMOTT, Esq., Cotton Manufacturer, Oldham.  
B. A. DOBSON, Esq., Machinist, Bolton.  
GEO. W. TAYLOR, Esq., Accountant, Manchester.

#### BANKERS.

THE NATIONAL PROVINCIAL BANK OF ENGLAND.  
SOLICITORS.  
Messrs. GOFFEY and NORTH, Solicitors, 15, Lord street, Liverpool.  
AUDITORS.

Messrs. THOMAS WADE, GUTHRIE, and CO., 12 and 14, Marsden-street, Manchester.

#### SECRETARY—Mr. GEO. W. TAYLOR.

#### REGISTERED OFFICE—MOLD.

#### PROSPECTUS.

This company is being formed for the purpose of purchasing, continuing, and extending the business of the Colomendy Brick, Tile, and Clay Company, Limited (hereinafter called the "Old Company"), carried on by them at Tyddyn, Glan Alyn, and Colomendy respectively, all situated near the town of Mold, North Wales.

The property comprises buildings, plant, machinery, stocks on hand, and three leases under which the lands used therefor and in connection therewith are held.

The Old Company was registered in 1875, but out of the subscribed capital the proportion available for working purposes, after payment of vendor and expenditure on buildings and plant, being inadequate, additional moneys were borrowed, with unsatisfactory results; and it has, therefore, been deemed desirable that under and by means of a voluntary liquidation the entire property might be acquired by the new company as a going concern and as a whole.

The machinery and plant are modern and in working order, and as now arranged are capable of turning out 60,000 machine made bricks per week. A siding of about 300 yards in length connects the brickyards with the London and North-Western Railways, and the distance by road to Mold being only 1*l* mile, the works are thus most favourably situated for readily placing their manufactures in the market. The holding is under a lease for 28 years from 24th June, 1875, at a rental of £18 per kiln of 1630 cubic feet, with a minimum of £5*l.* per annum.

At Glan Alyn there is a large deposit of very pure silica with a small mixture of fire-clay, largely used by iron and brass founders for lining cupolas, some of the leading engineers of the kingdom stating it to be far superior to any other sand in the market.

The present sales average 60 tons per week, but these might easily be increased to 100 tons, and the quantity proved is estimated as sufficient for about five years' working at this increased rate.

At Colomendy is a deposit of sand similar to that at Glan Alyn, but if anything of rather better quality, which has not been worked by the Old Company, as they were able to meet all their sales from Glan Alyn. It has, however, been proved by other parties, and must, without doubt, be considered a very valuable part of the company's property.

The sand, both at Glan Alyn and Colomendy can be worked easily and cheaply, and the quantity at the latter place is amply large enough to far outlast the terms of the leases at any reasonable output—say, at 50 tons per week.

These two properties are held jointly under leases dated 22nd November, 1875, for a term of 21 years, from 1st July, 1875, at a royalty of 5*l.* per ton of 21 cwt., on the sand, with a minimum rent of £100 per annum.

By agreement dated 25th June, 1879, made between the Liquidators of the Old Company of the one part, and James Ashworth for and on behalf of the present company of the other part, it is provided that the purchase money for the whole of the property mentioned in paragraph 2 of this prospectus, with the goodwill, shall be £6750, to be paid partly in cash and partly in shares, as therein expressed.

A statement has been carefully prepared to show the results which may be confidently anticipated from the first six months of the company's trading.

From this it appears that, at a very low estimate, the sales at Tyddyn would amount to £104*l.* during the half-year, and those at Glan Alyn to £108*l.* making together £212*l.* Two contracts have been proposed with respectable parties, according to the terms of which the cost of producing and preparing for sale goods of the above value would be at Tyddyn £26*l.* and at Glan Alyn £23*l.* making together £129*l.* which would leave a gross profit of £23*l.* and after deducting £23*l.* for rent, management, and charges, there would be a net profit of about £50*l.*

There is, however, but little doubt that in subsequent years the sales, and consequently the profits, may prove considerably in excess of these calculations.

As there are large stocks of bricks at Tyddyn and of sand at Glan Alyn ready for sale the company will be able to commence trading immediately on taking over the works, without any delay whatever.

The only contract or agreement entered into is that for the purchase referred to above, as dated June 25, 1879, made between the Liquidators of the Old Company of the one part, and James Ashworth, for and on behalf of the present company, of the other part.

**CARDIGANSHIRE.**  
In the parish of Llanbadarn-Fawr, about five miles from Aberystwyth, and two miles from Bow Street Station, on the Cambrian Railways.

**A HIGHLY DESIRABLE AND COMPACT FREEHOLD ESTATE OF ONE HUNDRED AND THIRTY TWO ACRES.**

Comprising an excellent FARM of 109 acres, known as RHOSGOCH, in the occupation of Mr. John Jones; also a small FARM of 17 acres, called GWAROWM, in the occupation of Mr. David Lewis; and the freehold GROUND RENTS and REVERSIONARY INTEREST in ELEVEN LEASEHOLD COTTAGES.

**M. R. G. T. SMITH** is instructed to SELL, BY PUBLIC AUCTION, at the Belle Vue Hotel, Aberystwyth, on Wednesday, the 27th day of August, 1879, at Three o'clock in the afternoon, the above property, which is bounded by the estates of Sir Pryse Pryse, Bart.; the Trustees of the late T. O. Morgan, Esq.; J. W. S. Bensall, Esq.; and others.

It will first be offered in One Lot, and, if not so sold, the two farms will be put up together, and each leasehold separately.

The property is in the immediate neighbourhood of Bronfloyd and other mines, and valuable deposits of lead ore are believed to lie underneath the estate.

Plan and particulars, with conditions of sale, will shortly be ready, and may be obtained from Messrs. TALBOT and WOODS, Solicitors, Newtown; EVAN POWELL, Land Agent, Llanidloes; or from the Auctioneer, Aberystwyth.

**VALUABLE MINING PLANT, OHIO, ONCHAN, ISLE OF MAN.**

**M. R. THOMSON** has received instructions from the Coroner of Middle Sheading to SELL, BY AUCTION (under due process of law), on Thursday next, August 28th, at Eleven o'clock, the extensive and valuable

#### M I N I N G P L A N T.

The property of the MANX SILVER-LEAD MINERAL COMPANY (LIMITED).

Comprising excellent WATER-WHEEL, 30 feet diameter, 4 feet breast, wrought-iron axleboxes and crank wheel, 6 feet diameter; superior DRAWING MACHINE with patent friction couplings; 120 fathoms wire rope, sheaves, &c.; flat-roof and T bob joints and pins; head gear; 35 fathoms of main rods; strapping plates; 7 in. plunger lift, 35 fathoms long; 7 in. drawing lift, 15 fathoms long; 6 in. drawing lift, 20 fathoms, with valves, buckets, and rods, all in good condition; 6 in. ram, with H pieces and bottoms to match; upwards of 70 fathoms of iron stave ladders; 60 fathoms of light railway rails; 60 fathoms wood railway, plated with iron 1*l* 4*s.* in. in.; wagons, drawing kibbles (iron), small drawing kibbles, jack rolls, crab winch, steel jumpers, hammers, picks, pinch bars, wheelbarrows, wooden blocks, dressing tools, quantity of iron, powerful screw; 30 fathoms 5*l* cable chain, grindstone, superior right-hand dial, about 125 fms. of water troughs, smith's bellows, anvils, vises and boring machine attached, two sets of stocks and dies, sledge; and other hammers, two stoves and piping, timber, blasting powder, and dynamite.

14 in. SUPERIOR BRASS TURBINE, 10-horse power, with large cistern and pipes, manufactured by the Canal Head Foundry, Kendal.

Very superior "RELIANCE" AIR COMPRESSOR, manufactured by Hathorn and Co., London, capable of working from four to six drilis (this machine is equal to new, it having only been in work for a short time); ROCK DRILLING MACHINE, with 39 drills, all in good order; about 130 fathoms of 2-inch air pipes and hose to match; exploder, with 186 yards of cable; crushing mill; two newly-erected, wooden houses, a range of wooden houses, used as a changing house, smithy storehouse, and office, with numerous other articles connected with a mine. Steamers leave the landing-pier for the Isle of Man.

JOHN KERRUSH, Coroner of Middle Sheading.

#### DUNSLY WHEAL PHENIX TIN MINING COMPANY (LIMITED).

**M. ESSRS. SKEWIS AND SON** are instructed by the Liquidator TO SELL, AT AUCTION, in One Lot, on Tuesday, 2nd September, 1879, at Four o'clock in the afternoon, at Webb's Hotel, Liskeard, the undermentioned

#### V A L U A R L E M I N I N G M A T E R I A L S A N D P L A N T,

With or without the SETTS, as may be determined at the time of Sale, viz.:—

ONE 40 inch ROTARY WINDING AND PUMPING ENGINE, with 10 ton BOILER; 60 fathoms 10 inch pitwork; lot of 7 inch pumps; 75 fathoms 2*l* 4*s.* inch round iron rods; 80 fathoms 5*l* chain; new 12 head stamp axle; hammered iron lifters; balance bobs; shaft tackles; smiths' bellows; 70 fathoms 2*l* 4*s.* inch tramway iron, with a lot of other useful materials.

The sett is situated immediately between Phoenix United and Marke Valley Mines.

The whole may be viewed on application to Mr. J. J. SIMMONS, Phoenix United Mines, Liskeard.

Dated Langstone House, Bridestowe, 14th August, 1879.

#### I N L I Q U I D A T I O N .

#### S A N T A N D E R Z I N C M I N I N G C O M P A N Y (L I M I T E D).

**M. ESSRS. J. AND C. B. PARSONS** WILL SELL, BY AUCTION, at the Auction Mart, Tokenhouse yard, London, E.C., on Tuesday, the 9th September, at Two o'clock, by order of the Liquidator, the

#### L E A D M I N E S

Belonging to the above company, situated at BABAGO, near San Vincente, in the province of SANTANDER, SPAIN.

These mines have been worked for lead ore from 1874 to 1878. Nearly £10,000 has been expended in developing them. A powerful steam engine and machinery for dressing lead ore has been erected at a cost of over £2000. A good house is built on the property for the manager. Tools, weighing machine, furniture, rails, tramway, and various articles, valued at £350, will be included and offered in One Lot.

This is a first-class opportunity for any party who can command £4000 or £5000, as in the first cross-cut there is a large quantity of lead in sight, and about 100 tons underfoot in the stopes. The gallery has been driven 300 yards on a level 17 ft. wide towards the winze, where ore of 80 per cent. was found but could not be taken out for the great influx of water. Another 80 yards will cut the ore under the winze and drain the same.

A further outlay of about £300, for extra buddles and crusher will make the mine capable of bringing out a large quantity of dressed ore monthly, at a profit of 23*l* to 24*l* per ton.

A market has been found for any quantity of lead ore at San Sebastian; and owing to a decision of the Government, the French company's road adjoining the Babago Mines can be used without paying any fees, reducing the cost of transport from 2*l* per ton to 8*l*. 4*d.* per ton.

For further particulars apply to the auctioneers, 16, High Street, Bristol; or to the liquidator, care of Messrs. FOX and WHITTUCK, Solicitors, 35, Corn Street, Bristol.

#### P R E L I M I N A R Y .

#### I N L I Q U I D A T I O N .

#### R O O K H O P E L E A D M I N I N G C O M P A N Y (L I M I T E D).

**M. R. HERBERT FULLER** has received instructions TO OFFER ALL the LEASES, PLANT, MACHINERY, &c., Belonging to the said company.

Particulars will shortly be issued. In the meantime information can be obtained from Messrs. HANCOCK, SHARP, and HALES, Solicitors, 74, King William-street; from the Liquidators, 8, Austinfriars; and from the Auctioneer, 1, Queen Victoria-street, E.C.

#### I M P O R T A N T S I L V E R - L E A D M I N E F O R S A L E .

**T O B E S O L D , B Y A U C T I O N .** within Dowell's Rooms, No. 26, George's-street, Edinburgh, on Wednesday, the 10th September, 1879, at Two o'clock P.M., that—

#### V A L U A B L E S I L V E R - L E A D M I N E .

Situated in the ISLAND OF SARDINIA, called GIBBAS. The sett, which is extensive, is within a mile of Porto Corallo, where the mineral is shipped in barges, and is distant about thirty miles from Cagliari, to which there is a good Government road. There is a full equipment of pumping, drawing, and dressing machinery on the mine.

#### S H O R T R E P O R T .

"Llanbadarn, Cardiganshire, 1st August, 1879. Having had charge of the Gibbas Mine during the campaign of 1877-8, and being well acquainted with the metalliferous features of the sett, I am of opinion that with a moderate outlay judiciously applied the mine will produce large and profitable returns of lead ore." (Signed) S. Y. DUNN.

For particulars, apply to Mr. JAMES MARTIN, C.A., 49, Castle-street, Edinburgh; or to Messrs. GILLESPIE and PATERSON, W.S., 81a, George-street, Edinburgh, Scotland.

#### C O L L I E R Y P L A N T .

HOWARD'S WEST HARTLEY COLLIERY, NETHERTON, NEAR MOPPETH, NORTHUMBERLAND.

**F O R S A L E** (on account of the death of the proprietor), THE RHOS ANTHRACITE COLLIERY, LLANELLY, SOUTH WALES.

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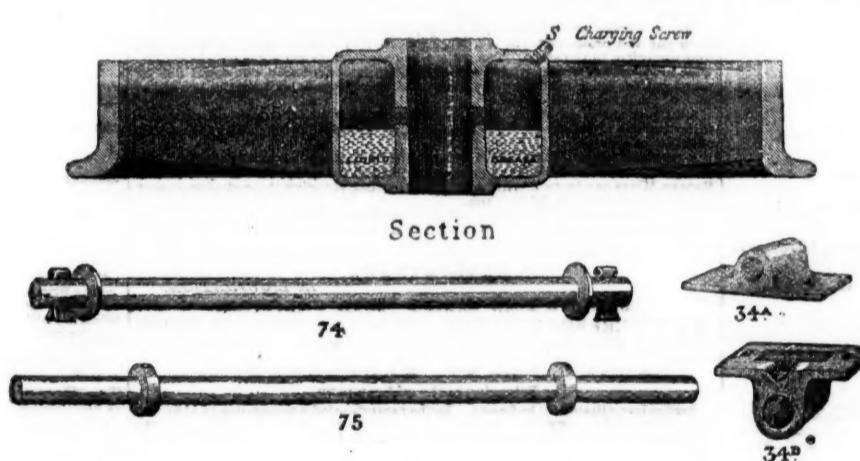
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AND ARE THE SOLE MAKERS OF

Hadfield's Self-oiling Steel Wheels  
(PATENTED).

These possess advantages held by no other wheels, and are specially adapted for Collieries, Ironstone Mines, Slate Quarries, Lead and Copper Mines, &c., &c., where LOOSE Wheels are used (*i.e.*, those revolving upon their own axles). By the old system of lubricating loose wheels, it is well known this is attended with constant labour and excessive waste; and as so little of the grease or oil applied reaches the wearing surfaces, and as re-greasing can only take place at fixed parts of the workings, the bosses of the wheels and bearings of the axles soon become dry, and cut each other; thus causing enormous wear and tear, and necessitating extra labour, haulage power, and expense. These and numerous other defects are entirely remedied by these wheels, as will be readily seen from the following illustrations and advantages claimed.

N.B.—Price per Set of Wheels and Axles (ready for use) forwarded on receipt of—1. Diameter of Wheel on tread. 2. Width of tread. 3. Diameter and total length of axle, also whether No. 74 or 75. 4. Rail gauge. 5. Rolling load.

55<sup>4</sup>55<sup>4</sup>72<sup>4</sup>35<sup>4</sup>

The following are a few of the numerous Advantages claimed by the above Self-oiling Wheels:—

- 1.—Two-thirds (at least) less grease or oil is required than at present used by any known method of lubricating Mining Wagons, whether by hand, machine, or otherwise.
- 2.—These wheels effect a very great saving in haulage power; also wear and tear—being so constructed as never to allow the bearings to become dry. The revolving of the wheel leads out the oil as required, and immediately the wagon stops the lubricator ceases its action.
- 3.—No waste of grease can occur, no matter in what position the wagon may be placed, when discharging its contents (even if up side down); and when the wagons are not in use it is utterly impossible for any grease to escape, as it is all stored below the outlet (as shown above).
- 4.—When once these wheels have been charged with liquid grease (which can be done by any inexperienced person) they do not require any attention or re-greasing whatever for several weeks or even months afterwards, in proportion to the distance travelled.
- 5.—These wheels can be readily fixed to any description of either wood or iron corves now in use, whether the wheels are upon the inside or outside of the frame.
- 6.—They are exceedingly simple in construction, have no detail, and are not liable to get out of order.
- 7.—They possess great strength, durability, and extreme lightness, being made of CRUCIBLE STEEL.

Where FAST Wheels and Axles are adopted instead of Loose ones, as shown above, see our Illustrated Sheets of Drawings Nos. 2 and 3 of

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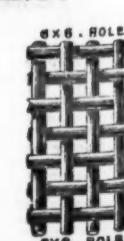
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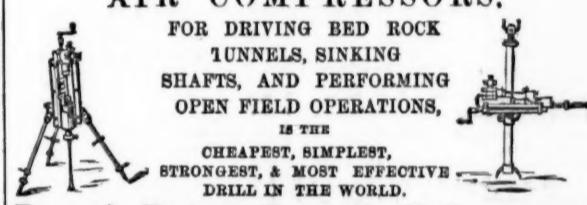
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